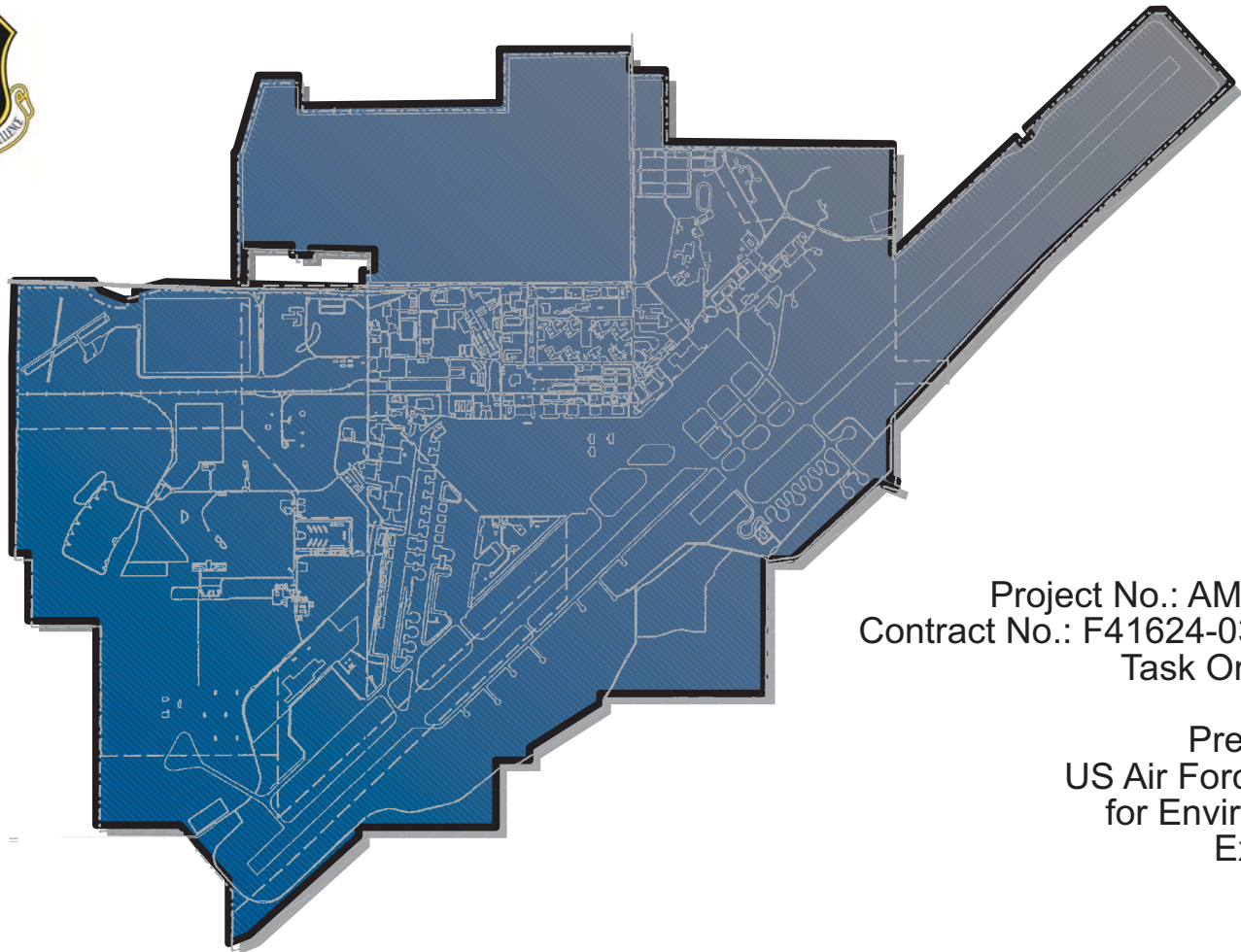




Final Environmental Assessment for a Security Forces Armory/Combat Arms Facility



Project No.: AMC204638
Contract No.: F41624-03-D-8595
Task Order 0202

Prepared for
US Air Force Center
for Environmental
Excellence

March 2005



CH2MHILL

2485 Natomas Park Drive, Suite 600
Sacramento, California 95833-2937

Architect-Engineering (A-E) Services



Final Environmental Assessment for a Security Forces Armory/ Combat Arms Facility

**CDRL A001B, A001D, A001E, and A001J
Paragraph 9.1, 9.4.2, and 12.6**

**Prepared for
Travis Air Force Base
Travis Air Force Base, California 94535-2041**

**Contract No. F41624-03-D-8595
Task Order 0202
Project No. AMC204638**

Prepared by



Document No.: TR_FA001D-elec

March 21, 2005

**2485 Natomas Park Drive, Suite 600
Sacramento, California 95833**

**Final Finding of No Significant Impact (FONSI)
Environmental Assessment for a Security Forces Armory/
Combat Arms Facility**

Travis Air Force Base, California

Introduction

This Finding of No Significant Impact (FONSI) was prepared in accordance with the National Environmental Policy Act (NEPA) of 1969; President's Council on Environmental Quality (CEQ) regulations for implementing the procedural provisions of NEPA, 40 Code of Federal Regulations (CFR) 1500-1508; and Environmental Impact Analysis Process, 32 CFR 989. The decision in this FONSI is based upon information contained in the *Environmental Assessment (EA) for a Security Forces Armory/Combat Arms (SFA/CA) Facility at Travis Air Force Base (AFB)*. The purpose of the EA is to determine the extent of environmental impact that may result from proposed improvements at Travis AFB and to evaluate whether these impacts, if any, would be significant.

The purpose of the Proposed Action is to provide a centralized, environmentally safe area for arms training, operations, maintenance, and storage near an existing firing range. The training and administrative functions for the range are currently housed in antiquated buildings near the old hospital (Building 380).

Description of Proposed Action and Alternatives

The alternatives that have been analyzed to accomplish the action include building the SFA/CA Facility near Building 373 (Proposed Action), near Building 1370, or near Building 1380 and the No Action Alternative. To be considered a reasonable alternative, the chosen alternative should improve armory operations and training, in a cost-efficient and effective manner, with minimal impact to human and natural resources. In addition, the chosen alternative must meet or exceed state environmental requirements for building and parking lot construction; comply with Air Force and Department of Defense (DoD) planning and design manuals, design standards, and safety requirements for airfield operations; meet minimum DoD Anti-Terrorism/Force Protection (AT/FP) requirements; and provide operational flexibility, because different organizations would use the building.

The U.S. Air Force proposes the construction of a single-story building with a footprint of approximately 18,000 square feet and a parking lot of approximately 0.5 acre. This would require landscape clearing and site preparation, installation of utility systems, and construction of support infrastructure and facilities.

All alternatives considered for the action are analyzed in the EA. The No Action Alternative is carried forward for analysis in accordance with Air Force Regulation 32 CFR 989.8 (d).

The Proposed Action is the only alternative that meets the selection criteria, in addition to having no significant adverse effect on the natural or human environment.

Decision

Based on the review of the EA, the Air Force has decided to proceed with the construction of the SFA/CA Facility. The potential impacts to the human and natural environment were evaluated relative to the existing environment. For each environmental resource or issue, anticipated direct and indirect effects were assessed, considering both short-term and long-term project effects.

Only minor, short-term, insignificant impacts would be expected from implementation of the Proposed Action listed in the EA. The Proposed Action would occupy approximately 1 acre during construction; the built facility would have a smaller footprint. During construction and operation, the Proposed Action would result in less than significant impacts or no effects to air quality, noise, hazardous materials, hazardous waste, stored fuels, water resources, biological resources, land use, cultural resources, transportation systems, airspace/airfield operations, safety and occupational health, environmental management, and environmental justice. During construction, the Proposed Action would provide short-term, socioeconomic benefits through the generation of construction jobs.

Overall, the analysis for this EA indicates that the construction of an SFA/CA Facility near Building 373, as described under the Proposed Action, would not result in or contribute to significant negative cumulative or indirect impacts to the resources in the region.

Conclusion

In accordance with the CEQ regulations implementing NEPA and the Air Force Environmental Impact Analysis Process, the Air Force concludes that the Proposed Action will have no significant impact on the quality of the human environment and that the preparation of an environmental impact statement is not warranted.

A copy of the EA was made available to the public at the Fairfield-Suisun Community Library, the Vacaville Public Library, and the Mitchell Memorial Library at Travis AFB from 27 Feb 05 to 13 Mar 05. No comments were received from the public.

Captain Jeremiah Frost, USAF
60 CES/CEVP
411 Airmen Drive
Travis AFB, California 94535

SIGNED:



DATE: 15 APR 05

SCOTT M. HANSON, Colonel, USAF
Vice Commander, 60th Air Mobility Wing (AMC)

REPORT DOCUMENTATION PAGE			Form Approved OMB No. 0704-0188	
Public reporting burden for this collection of information is estimated to average 1 hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Washington Headquarters Services, Directorate for Information Operations and Reports, 1215 Jefferson Davis Highway, Suite 1204, Arlington, VA 22202-4302, and to the Office of Management and Budget, Paperwork Reduction Project (0704-0188), Washington, DC 20503.				
1. AGENCY USE ONLY (Leave blank)		2. REPORT DATE March 21, 2005		3. REPORT TYPE and DATES COVERED Final Environmental Assessment and Finding of No Significant Impact (FONSI) for a Security Forces Armory/Combat Arms Facility
4. TITLE and SUBTITLE Travis Air Force Base Architect-Engineering (A-E) Services Final Environmental Assessment and Finding of No Significant Impact (FONSI) for a Security Forces Armory/Combat Arms Facility Task Order 0202 CDRL A001B, A001D, A001E, and A001J; Paragraph 9.1, 9.4.2, and 12.6				5. FUNDING NUMBERS F41624-03-D-8595 AMC204638
6. AUTHOR(S) CH2M HILL				
7. PERFORMING ORGANIZATION NAME(S) and ADDRESS(ES) CH2M HILL 2485 Natomas Park Drive, Suite 600 Sacramento, California 95833				8. PERFORMING ORGANIZATION REPORT NUMBER 316925
9. SPONSORING/MONITORING AGENCY NAME(S) and ADDRESS(ES) HQ AFCEE/ECE 3300 Sidney Brooks, Building 532 Brooks City-Base, Texas 78235-5112				10. SPONSORING/MONITORING AGENCY REPORT NUMBER DI-MISC-80711A
11. SUPPLEMENTARY NOTES				
12a. DISTRIBUTION/AVAILABILITY STATEMENT Statement A: "Approved for Public release: distribution is unlimited."				12b. DISTRIBUTION CODE
13. ABSTRACT (Maximum 200 words) This submittal provides the Final <i>Environmental Assessment and Finding of No Significant Impact</i> (FONSI) for a Security Forces Armory/Combat Arms Facility at Travis Air Force Base, California. (Task Order 0202, AMC204638)				
14. SUBJECT TERMS Final <i>Environmental Assessment for a Security Forces Armory/Combat Arms Facility</i>				15. NUMBER OF PAGES One Volume
				16. PRICE CODE
17. SECURITY CLASSIFICATION OF REPORT Unclassified		18. SECURITY CLASSIFICATION OF THIS PAGE Unclassified		19. SECURITY CLASSIFICATION OF ABSTRACT Unclassified
				20. LIMITATION OF ABSTRACT Unlimited

NSN 7540-01-280-5500

Standard Form 298 (rev. 2-89)
Prescribed by ANSI Std Z39-18

DESTRUCTION NOTICE - for classified documents, follow the procedures in DoD 5200.22-M, Industrial Security Program Regulation, Chapter IX. For unclassified, limited documents, destroy by any method that will prevent disclosure of contents or reconstruction."

Preface

CH2M HILL is performing Architect-Engineering (A-E) Services to support Natural Resource Liability Asset Management (NRLAM) Assessment, Environmental Assessments, and Various Conservation Projects at Travis Air Force Base, California. This work is being conducted under the Air Force Center for Environmental Excellence Contract No. F41624-03-D-8595, Task Order No. 0202 (Project No. AMC204638 and Project No. AMC208892).

Key CH2M HILL project personnel for the Final Environmental Assessment and Finding of No Significant Impact (FONSI) for a Security Forces Armory/Combat Arms Facility at Travis Air Force Base completed under this contract are:

- Tony Jaegel – Regional Project Team Lead
- Karin Lilienbecker – Task Manager
- Christine Roberts – Senior Review
- Ed McCarthy – Project Team Member
- Fawn Elhadidi – Document Coordinator
- Kim Basial – Technical Editor

For quality control purposes, CH2M HILL staff has reviewed this Environmental Assessment and FONSI. The senior reviewer listed below, by virtue of her signature, has concluded that this document meets or exceeds the deliverable requirements set forth in the Statement of Work.



Christine Roberts

December 10, 2004

Date

Executive Summary

Introduction

The U.S. Air Force (Air Force) Air Mobility Command proposes the construction of a Security Forces Armory/Combat Arms (SFA/CA) Facility at Travis Air Force Base (AFB). The purpose of this Environmental Assessment (EA) is to determine whether the Proposed Action would have a significant adverse effect on the quality of the environment. An EA is the appropriate documentation required according to Air Force Regulations (Title 32 of the Code of Federal Regulations [CFR], Section 989, Environmental Impact Analysis Process). The Proposed Action does not qualify for a Categorical Exclusion and an environmental impact statement is not required because none of the impacts potentially resulting from the Proposed Action would be significant.

Purpose and Need for the Action

The purpose of the Proposed Action is to provide a centralized, environmentally safe area for arms training, operations, maintenance, and storage near the existing firing range. The training and administrative functions for the range are currently housed in antiquated buildings near the old hospital. The current facilities do not meet safety or security requirements and lack adequate storage space. The Security Forces warehouse function is distributed among several buildings inside the explosive distance safety zone. Hazardous cargo shipments force frequent closures of the facilities, which jeopardize entire Security Force missions, causing morale problems and ultimately affecting Security Force mission accomplishment.

Description of Proposed Alternatives

The alternatives analyzed in this EA are the No Action Alternative, the Proposed Action, and two alternative site locations. To be considered a reasonable alternative, the proposed construction of a single-story SFA/CA Facility is intended to improve armory operations and training in a cost-efficient and effective manner, with minimal impact on human and natural resources. The No Action Alternative is carried forward for consideration in accordance with 32 CFR 989.8(d).

Alternative 1 – No Action Alternative

Under the No Action Alternative, the construction of the SFA/CA Facility would not occur and the existing facilities would continue to be used. Building 828 is currently used as the Security Forces Armory. Building 828 is secured by cipher lock, which is not in compliance with Department of Defense Manual 5100.76M, Physical Security of Conventional Arms, Ammunitions and Explosives. Building 380A is currently used as the Combat Arms Training and Maintenance facility. The No Action Alternative does not satisfy the purpose and need for the Proposed Action.

Alternative 2 – Proposed Action: Construction of an SFA/CA Facility Near Building 373

Alternative 2 is the Proposed Action. The Air Force proposes to construct a permanent SFA/CA building and parking lot near Building 373. The new location would be approximately 0.25 mile from the range, resulting in more efficient travel between the classroom and range. The SFA/CA site would be located along the south side of Vandenberg Drive between Baker Street and Collins Drive. The building and parking lot would be separated by Vandenberg Drive. The parking lot would be approximately 0.5 acre in size and located north of Vandenberg Drive.

The building would have a footprint of approximately 18,000 square feet and provide space for classroom training, administration, supply and tool storage, weapons maintenance areas, weapons and ammunition storage, and target and miscellaneous storage. Two parts cleaners would be installed. The firing of weapons for training purposes would be conducted exclusively at the nearby range. The building, parking lot, and area used during construction would occupy as much as 1 acre. Portions of the Proposed Action site would be located within the boundary of Environmental Restoration Program (ERP) Site LF006.

The SFA/CA Facility would also be used as a mobility/contingency warehouse for bulk storage and bins of materials needed to support base operations. Materials stored at the facility would include weapons, gear, and equipment to be issued to individuals.

Alternative 3 – Construction of an SFA/CA Facility Near Building 1370

Alternative 3 would be to construct an SFA/CA Facility near Building 1370, which is also used by Security Forces and is near the existing range. The building is close to the fence line, and Anti-Terrorism/Force Protection requirements, including setbacks from the fence line, would have to be met. Thus, the SFA/CA building would have to be built west of Building 1370 and the fence line. The existing parking lot at Building 1370 could be used. The type of structure and its size and purpose would have a similar layout, function, and design as the action proposed under Alternative 2. This location was previously used as a small arms firing range.

Implementation of Alternative 3 would potentially result in significant adverse impacts. It would be located in an area with incompatible land use designations and in Accident Potential Zone (APZ) I, where construction of this type of facility is not permitted by Air Force regulations. No other impacts potentially resulting from implementation of the alternative would be significant.

Alternative 4 – Construction of an SFA/CA Facility Near Building 1380

Alternative 4 would be to construct an SFA/CA Facility near Building 1380, which is also used by Security Forces and is near the existing range. Like Building 1370, this building is close to the fence line, and Anti-Terrorism/Force Protection requirements, including setbacks from the fence line, would have to be met. Thus, the SFA/CA building would have to be built west of Building 1380 and the fence line, on an area currently used as a leach field. A leach field is required because the area is remote and not connected to the Base sanitary sewer system. Locating the building here would require relocating the existing leach field (e.g., south of Collins Drive, toward the airfield) or connecting the building to the

sewer line. The existing parking lot at Building 1380 could be used. The type of structure and its size and purpose would have a similar layout, function, and design as Alternative 2.

Implementation of Alternative 4 would potentially result in significant adverse impacts. It would be located in an area with incompatible land use designations and in APZ I. No other impacts potentially resulting from implementation of the alternative would be significant.

Environmental Consequences

The EA provides the regulatory background, as applicable, for the various environmental resource areas and evaluates potential impacts resulting from construction and operation of the proposed SFA/CA Facility at the Alternative Action sites. The potential impacts to the human and natural environments were evaluated by comparing the Proposed Action and its alternatives to the existing environmental baseline conditions. The subsection for each environmental resource or issue assesses the anticipated direct and indirect impacts, considering both short- and long-term effects of Alternatives 2 through 4.

Air Quality

Alternative 1

Under the No Action Alternative, construction would not take place and air pollutant emissions associated with construction would not be generated. Emissions from operations, including travel to the site, would not change from current conditions.

Alternative 2

The Proposed Action would have temporary, short-term adverse impacts on air quality as a result of construction emissions. All construction-related impacts are expected to be local (i.e., confined to the construction site area) and limited to the duration of the construction activities. Impacts would be less than significant.

Long-term adverse impacts would be limited to operation emissions from the two new parts cleaners and the space heating system at the new SFA/CA Facility. The increase in mobile emissions would be negligible because the Proposed Action would not increase the trips or vehicle miles traveled to the SFA/CA Facility during its operation.

Emissions of VOCs, NO_x, and CO during construction and operation of the proposed SFA/CA Facility are far below the de minimis thresholds of 100 tons per year for each of the three applicable pollutants. When the total emissions of the nonattainment and maintenance criteria pollutants do not exceed the de minimis threshold, the emissions must then be compared to the air quality emissions inventory of the air basin to determine the regional significance of the federal action. The potential increase in emissions of VOCs, NO_x and CO for both construction and operation are far below the 10 percent threshold. Therefore, the proposed project is not considered regionally significant.

Alternative 3

Under Alternative 3, the same building described under Alternative 2 would be constructed on a currently vacant lot, but at a different location. A parking lot would not need to be

constructed, eliminating emissions (compared to Alternative 2) resulting from construction activities and operation of vehicles and equipment during construction of this feature. Emissions for operations of Alternative 3 would be similar to those described for Alternative 2.

Alternative 4

Emissions for operation of Alternative 4 would be similar to those described for Alternative 3.

Noise

Alternative 1

The No Action Alternative would not result in construction activities. Therefore, no construction noise would occur.

Alternative 2

Project-related noise exposure changes would likely result from construction activities under the Proposed Action. After construction, no change in noise levels is anticipated during use or operation.

Noise associated with construction activities would be temporary, occur during daytime hours, and vary in levels, depending on the sources in use and types of activities. Noise associated with flightline activities at the Alternative 2 site is approximately 70 to 75 decibels (dB) community noise equivalent level (Travis AFB, 2002). There are no sensitive receptors near the Alternative 2 site, and the closest building is more than 250 feet away. Noise levels are expected to be at or below background levels by the time they reach offsite receptors, and would not approach 65 dB at the nearest noise-sensitive receptor. Construction activities are not expected to result in significant noise impacts.

Alternative 3

Construction activities and noise generation levels at the Alternative 3 site would be identical to those discussed for Alternative 2. Noise affecting the SFA/CA Facility at this alternative site would be associated with flightline activities, and would reach a community noise equivalent level of approximately 80 dB (Travis AFB, 2002). Background noise levels affecting the SFA/CA Facility at this alternative site would also be generated at the adjacent facility, the small arms firing range at Building 1370. Construction noise generated by the Proposed Action would not impact Building 1370 because Building 1370 is located close to the flightline and produces loud noises, and precautions are already in place to protect occupants from extraneous noise. There are no receptors sensitive to noise near the Alternative 3 site.

Alternative 4

Noise impacts to neighboring facilities, including sensitive receptors, generated during operation of the SFA/CA Facility would be identical to those described above for Alternative 3. Construction is not expected to result in significant noise impacts.

Hazardous Materials, Wastes, ERP Sites, and Stored Fuels

All project alternatives would generate hazardous waste. Lubricants, cleaning solvents, and rags are used during weapons maintenance, and are disposed of as hazardous waste.

Under Alternatives 2, 3, and 4, the amount of hazardous material used and hazardous waste generated during weapon cleaning activities would increase slightly because two new parts cleaners would be installed and the number of attendees per training class would increase from 28 to 31. Compliance with current waste management procedures would reduce potential impacts to less than significant levels.

The project sites are not located on or near stored fuel locations; therefore, impacts to stored fuel locations are not anticipated for any of the alternatives.

Alternative 1

Implementation of the No Action Alternative would not result in changes to current waste production or waste management practices.

Alternative 2

Alternative 2 would involve construction occurring partially within the boundaries of ERP site LF006. Construction under Alternative 2 has the potential to disturb contaminated groundwater during excavation (e.g., for installation of utilities). Groundwater depths at Travis AFB generally range from 12 to 30 feet below ground surface, so encountering groundwater during construction is unlikely. If groundwater were encountered during construction, the Base Remediation Program Manager (BRPM) would be consulted and protective measures would be implemented based on direction from the BRPM. Therefore, activities under Alternative 2 would result in less than significant impacts to hazardous waste during construction.

Alternative 3

Alternative 3 would involve construction within the boundaries of ERP site LF007. The Alternative 3 building site was previously used as a firing range. The potential presence of contamination could pose a risk to human and ecological health. This alternative would involve disturbing surface soils for grading. Subsurface soils would be disturbed during excavation of trenches for sewer pipelines and connections. Land use controls apply to all of ERP site LF007 and require coordination with the BRPM and regulatory agencies for all construction. Implementation of measures prescribed by the BRPM and regulatory agencies would reduce potential impacts to human health and the environment to less than significant levels.

Alternative 4

Construction and operational activities associated with Alternative 4 would comply with waste management procedures. This site does not have any known soil or groundwater contamination. Alternative 4 would be constructed over the existing leach field, which would be abandoned in place. A new, slightly larger leach field would be constructed for the new facility and Building 1370, or the facilities would be connected to the Base's sanitary sewer system. Because the site does not have any known contamination, construction of the

building and new sanitary facilities would not impact hazardous wastes. The impacts resulting from implementation of Alternative 4 would be considered less than significant.

Water Resources, Floodplains, and Wastewater

None of the alternatives are located within the 100-year floodplain, and none of the drainage ditches adjacent to the alternative sites have been determined jurisdictional waters of the U.S. (Travis AFB, 2002 and 2003; CH2M HILL, 2003). None of the alternatives would use groundwater or release water in a way that could impact groundwater. No significant impacts to floodplains, surface water, or groundwater are expected from any of the project alternatives. Historically, there has been no flooding at any of the sites, and the stormwater drainage system adjacent to each site is hydraulically adequate (CH2M HILL, 2000).

Alternative 1

If Alternative 1 were selected, no changes to water resources or to the stormwater drainage system would occur.

Alternative 2

The new SFA/CA Facility would increase the amount of impervious material at the site, decreasing stormwater infiltration rates and increasing the quantity of stormwater runoff in the immediate area. Compared to stormwater volumes currently being produced in other, related portions of the Base, the additional stormwater volume from this project is considered minimal. Because the increase in stormwater runoff from the Proposed Action would be minimal and improvements to the stormwater drainage system are being considered to address existing conditions, impacts to the stormwater drainage system and the potential for increases in flooding volumes or durations would be less than significant.

Construction would potentially result in short-term impacts to the drainage ditch, and ultimately to Union Creek, from erosion during earth-moving activities. The project would comply with applicable restrictions set forth in the required stormwater permit, stormwater pollution prevention plan, and dig permit. Best management practices would be implemented in accordance with these permits to prevent erosion. Compliance with the relevant permits and implementation of best management practices would reduce impacts from construction activities or stormwater discharges on Union Creek to less than significant levels.

Alternative 3

The Alternative 3 site is currently an open field that was previously a small arms firing range. There are no known water resources at the site (Travis AFB, 2002 and 2003; CH2M HILL, 2003). Drainage ditches are located adjacent to the site. Under Alternative 3, construction of a parking lot would not be required. Therefore, potential construction-related and operational impacts to flooding and water quality would be similar to, but proportionately less than, those described for Alternative 2.

Alternative 4

Potential construction-related and operational impacts to flooding and water quality would be similar to those discussed for Alternative 3.

Biological Resources – Federal- and State-listed Threatened or Endangered Species

Alternative 1

Under the No Action Alternative, the construction of an SFA/CA Facility would not occur, therefore, there would be no potential for impacts to biological resources.

Alternative 2

The Alternative 2 site is currently an open field. Surveys conducted in 1994, 1995, and 2001 to determine the potential presence of special-status flora, fauna, or habitats have not identified special-status species present at the site. The only potential waters of the U.S. associated with this alternative are a few wetlands, east and south of the proposed location. Steps would be taken to ensure that these wetlands would not be affected during construction.

Alternative 3

Under Alternative 3, the SFA/CA Facility building would be constructed, but a parking lot would not be required. Neither wetlands nor special-status species or their habitats have been identified at this site. Construction of this alternative would have no impact.

Alternative 4

Impacts would be identical to those described under Alternative 3.

Socioeconomic Resources

Alternative 1

Selection of the No Action Alternative would result in no changes to the socioeconomic resources at the Base or to Solano County.

Alternative 2

Implementation of Alternative 2, the Proposed Action, would have a minor, temporary impact on socioeconomic resources because it would require a temporary increase of approximately 100 civilian contract employees (construction workers) at the Base. The Proposed Action would not result in long-term change in Base employment or in onbase or regional populations.

The expenditure of approximately \$3.6 million for the proposed construction project is minor compared to ongoing construction activities in the region. There would be minor, short-term economic benefits to local convenience businesses from construction workers purchasing meals, gas, and other commodities in the vicinity of the Base. The impacts to socioeconomic conditions from temporary employment would be beneficial, but negligible compared to the Base or the county economy.

Alternative 3

The impacts under Alternative 3 would be similar to those described under Alternative 2.

Alternative 4

The impacts under Alternative 4 would be similar to those described under Alternative 2.

Cultural Resources

Alternative 1

Currently, no cultural resources are associated with the Combat Arms Facility. If the No Action Alternative were selected, current practices would continue and construction would not occur.

Alternative 2

There are no known archeological sites, historic buildings, or other culturally sensitive areas at the proposed site for Alternative 2. The closest building of the historical Air Defense Command is located approximately 700 feet from the Proposed Action location. Construction of Alternative 2 would not impact the Air Defense Command building. Activities would comply with the Travis AFB Cultural Resources Management Plan, and the Cultural Resources Manager would be contacted before the start of construction. This alternative would have no significant impact on cultural resources.

Alternative 3

There are no known archeological sites, historic buildings, or other culturally sensitive areas associated with Alternative 3. Activities would comply with the Travis AFB Cultural Resources Management Plan and the cultural Resources Manager would be contacted before the start of construction. This alternative would have no significant impact on cultural resources.

Alternative 4

The impacts under Alternative 4 would be identical to those described under Alternative 3.

Land Use

Alternative 1

Under the No Action Alternative, the construction of an SFA/CA Facility would not occur, and there would be no change to the existing land use.

Alternative 2

Alternative 2 proposes to construct an SFA/CA Facility designated as “administrative land use.” According to the Travis AFB General Plan land use maps, the existing and future land use designations for this site are open space and administrative, respectively. Although the Proposed Action is not compatible with the current land use designation, it is compatible with the future designation (Travis AFB, 2002). There would be no impact to land use because the Proposed Action and the future land use are compatible.

Alternative 3

Alternative 3 proposes to construct an SFA/CA Facility adjacent to the existing small arms firing range, which is designated as industrial under current designations and airfield clear

area under future designations. Because an administrative facility would be constructed under this alternative, Alternative 3 would not be compatible with the existing or future land use designations, and the impact to land use would be considered significant.

Additionally, the Alternative 3 site is located in APZ I (Travis AFB, 2002). Facilities used for education, professional services, and government services are considered incompatible with an APZ I designation. The SFA/CA Facility would be constructed to provide space for educational services; therefore, construction of the facility at the Alternative 3 site would be considered incompatible with airspace/airfield operations.

The Alternative 3 site is also located inside the boundary of LF007, which is managed under land use controls. Construction of this alternative would comply with the land use controls, including the requirement to coordinate with the BRPM and regulatory agencies prior to construction.

Alternative 4

The proposed Alternative 4 would locate the proposed SFA/CA Facility near Building 1380, which is currently used by the Fire Department and is near the range. This proposed site is located across the road from the proposed Alternative 3.

The existing and future land use designations for this alternative site are airfield clear area. Land use under Alternative 4 would be administrative. Administrative land use would not be considered compatible with either the current or future land uses. Furthermore, the site is located in APZ I and construction of the SFA/CA Facility at this site would be incompatible with the APZ I designation.

Alternative 4 would be located in the path of a proposed high-speed taxiway for Runway 03R/21L. This taxiway was sited in 1984 and has not developed into a viable project. If the Base were to choose to locate the SFA/CA Facility at the Alternative 4 site, the proposed taxiway site would have to be relocated or deleted because the SFA/CA Facility would be incompatible with the taxiway.

Transportation System

Alternative 1

The No Action Alternative assumes that the construction of the SFA/CA Facility would not occur and that the current use of the transportation system would continue unchanged.

Alternative 2

Under Alternative 2, local traffic patterns would be impacted temporarily during construction from construction vehicles and an increase in the number of vehicles traveling to the site. During operation, the number of attendees per training class would increase by three personnel; the number of staff permanently assigned to the facility would be the same as under current operations. Personnel would travel to a different building location as under current conditions. No significant impact to the transportation systems would occur from this alternative.

Alternative 3

The impacts under Alternative 3 would be similar to those described under Alternative 2.

Alternative 4

The impacts under Alternative 4 would be similar to those described under Alternative 2.

Airspace/Airfield Operations

Alternative 1

No change in operations of the airspace/airfield operations would result from the No Action Alternative.

Alternative 2

Under Alternative 2, the SFA/CA Facility would be located outside airspace and airfield operational areas. No impact to airspace/airfield operations would occur from this alternative.

Alternative 3

Construction of the SFA/CA Facility under Alternative 3 would locate it in APZ I. Locating the SFA/CA Facility in APZ I would not require any changes in airfield operations. Therefore, there would be no effect on APZ I as a result of locating the proposed building within its boundaries.

Alternative 4

The impacts under Alternative 4 would be identical to those described under Alternative 3.

Safety and Occupational Health

Alternative 1

Implementing the No Action Alternative would not change health or safety conditions. Construction would not be required under this alternative, so impacts to safety and occupational health during construction would not occur. Because the current conditions are not in compliance with Air Force safety and security requirements, continuing current practices would pose a risk to safety. Current facility operations do not affect public health because only military personnel are involved in Security Forces and Combat Arms operations.

Alternative 2

Implementation of Alternative 2 would require the construction of a new building, involving military and civilian personnel. The potential for adverse impacts to safety and occupational health are expected to be minor and limited to the duration of construction. Implementation of the Proposed Action would follow applicable rules and regulations regarding safety and occupational health. A health and safety plan for construction would be prepared that would include requirements such as shoring for excavations. Construction areas would be secured as necessary, to prevent unauthorized personnel from entering the work sites or excavations.

The current conditions are not in compliance with Air Force requirements. This alternative would create a new facility that would comply with Air Force requirements for safety and security. The impacts to safety resulting from implementation of this alternative would be considered a significant beneficial impact.

Alternative 3

The impacts under Alternative 3 would be identical to those described under Alternative 2.

Alternative 4

The impacts under Alternative 4 would be identical to those described under Alternative 2.

Environmental Management (Including Pollution Prevention, Geology, and Soils)

Alternative 1

There would be no change to pollution prevention, geology, or soils if the No Action Alternative were implemented.

Alternative 2

Implementation of the Proposed Action would comply with the overall objectives of the pollution prevention program at Travis AFB. Construction of the facility would produce only a minimal amount of waste in the form of construction debris, and measures to prevent pollution would be taken. All wastes generated during the construction phase of the project would be removed from the site and recycled. If recycling were not possible or feasible, the waste would be disposed of in accordance with all applicable regulations and policies. Waste production during operation of the building would be approximately equal to the current levels.

No important geological or soil resources are present in the area of the Proposed Action. Construction of this alternative would disturb surface soils and permanently alter the ground surface from a soil surface to a paved surface. Total disturbance would cover approximately 1 acre during construction, including access and staging areas; the area of permanently altered surface would encompass less than 1 acre. Therefore, the Proposed Action is not expected to result in significant impacts to geology or soils.

Alternative 3

The impacts under Alternative 3 would be similar to those described under Alternative 2.

Alternative 4

The impacts under Alternative 4 would be similar to those described under Alternative 2.

Environmental Justice

Alternative 1

Implementation of the No Action Alternative would not affect minority or low-income populations, or children.

Alternative 2

No low-income or minority populations in the surrounding area would be affected by the construction of the Proposed Action. In addition, the Proposed Action would not cause adverse impacts with the potential to disproportionately affect such populations if they were present.

Alternative 3

The impacts under Alternative 3 would be identical to those described under Alternative 2.

Alternative 4

The impacts under Alternative 4 would be identical to those described under Alternative 2.

Indirect and Cumulative Impacts

Alternative 1 is the No Action Alternative, and would have no potential for cumulative impacts. There are potential cumulative impacts to the resource areas discussed below from Alternatives 2, 3, or 4, in conjunction with other construction activities.

The main cumulative impacts to air quality would result from multiple construction projects occurring simultaneously. Not all of the other construction actions planned would be constructed simultaneously. Impacts to air resources resulting from implementation of the alternatives would conform to the State Implementation Plan and not be regionally significant.

The Proposed Action could impact water quality during construction. The Proposed Action would add minimally to the total amount of impervious surface at the Base. Non-point-source stormwater discharge at the Base is regulated under the Travis AFB Industrial Activities Storm Water Discharge Permit. Cumulative impacts from multiple actions would be addressed by the basewide permits and programs that are currently in place.

The stormwater drainage system and the sanitary sewer system are inadequate for current Base needs (Travis AFB, 2002). The Base has conducted studies to define system deficiencies and is developing remedial measures. The design of future sewer and stormwater upgrades should take into account the cumulative impacts resulting from the planned actions. The future actions of the Base should reduce cumulative impacts to the stormwater drainage and sanitary sewer systems to less than significant levels.

No significant indirect or cumulative impacts are anticipated from any of the alternatives.

Unavoidable Adverse Impacts

No significant unavoidable adverse impacts are expected from the construction or operation of the SFA/CA Facility under the Proposed Action Alternative.

The Alternative 3 and 4 sites are located in APZ I, and Air Force policy does not permit construction of administrative buildings in the APZs. Furthermore, both alternatives would be located in areas with incompatible land use designations. No other impacts potentially resulting from implementation of these alternatives would be significant.

Relationship between Short-term Uses and Enhancement of Long-term Productivity

The purpose of the Proposed Action is to construct an SFA/CA Facility that is adequate to meet the needs of Base operations. The training and administrative functions for the SFA/CA Facility are currently housed in antiquated buildings that are not adequate for Base needs and detract from Base operations. Long-term productivity would be enhanced by implementing Alternatives 2, 3, or 4, because the deficiencies in the current facility would be remedied.

Irreversible and Irretrievable Commitment of Resources

No significant adverse impacts would result from the commitment of resources under the Proposed Action.

Resources expected to be affected during the long-term use of the building include additional electricity and gas for heating.

Works Cited

CH2M HILL. 2003. *Groundwater Sampling and Analysis Program, 2002-2003 Annual Report*. November.

CH2M HILL. 2000. *Stormwater Drainage System Improvements Plan, Volume 1*. September.

Travis Air Force Base (AFB or Base). 2002. *Travis Air Force Base General Plan*. October.

Travis Air Force Base (AFB or Base). 2003. *Integrated Natural Resources Management Plan*. September.

Contents

	Page
Executive Summary.....	ES-1
Acronyms and Abbreviations	xiii
1.0 Purpose of and Need for the Proposed Action	1-1
1.1 Introduction.....	1-1
1.2 Need for the Action.....	1-1
1.3 Objectives of the Action.....	1-2
1.4 Location of Proposed Action	1-2
1.5 Scope of the Environmental Assessment	1-2
1.6 Decision(s) that Must be Made	1-2
1.7 Applicable Regulatory Requirements and Required Coordination.....	1-3
2.0 Description of the Alternatives, Including the Proposed Action.....	2-1
2.1 Introduction.....	2-1
2.2 Selection Criteria for Alternatives.....	2-1
2.3 Alternatives Considered but Eliminated from Detailed Study	2-1
2.4 Description of Proposed Alternatives	2-1
2.4.1 Alternative 1 – No Action Alternative.....	2-1
2.4.2 Alternative 2 – Proposed Action: Construction of an SFA/CA Facility Near Building 373	2-2
2.4.3 Alternative 3 – Construction of an SFA/CA Facility Near Building 1370.....	2-3
2.4.4 Alternative 4 – Construction of an SFA/CA Facility Near Building 1380.....	2-3
2.5 Description of Past and Reasonably Foreseeable Future Actions Relevant to Cumulative Impacts	2-3
2.6 Identification of Preferred Alternative	2-3
2.7 Comparison of the Environmental Impacts of Alternatives	2-4
3.0 Affected Environment	3-1
3.1 Introduction.....	3-1
3.2 Air Quality.....	3-1
3.2.1 Regional Climate	3-1
3.2.2 Current Air Quality Conditions	3-2
3.2.3 Indoor Air Quality.....	3-4
3.3 Noise.....	3-4
3.4 Hazardous Materials, Waste, Environmental Restoration Program Sites, and Stored Fuels	3-4
3.4.1 Hazardous Materials and Hazardous Waste	3-4
3.4.2 Solid Waste	3-5
3.4.3 Environmental Restoration Program Sites	3-5
3.4.4 Former Small Arms Firing Range	3-6

Contents, Continued

	Page
3.4.5 Stored Fuels	3-6
3.5 Water Resources, Floodplains, and Wastewater	3-7
3.5.1 Groundwater	3-7
3.5.2 Surface Water	3-7
3.5.3 Floodplains	3-8
3.5.4 Wastewater	3-9
3.6 Biological Resources	3-9
3.6.1 Waters of the United States	3-9
3.6.2 Special-status Species	3-11
3.7 Socioeconomic Resources	3-13
3.8 Cultural Resources	3-14
3.8.1 Cultural History	3-14
3.8.2 Cultural Resource Investigations and Resources	3-14
3.9 Land Use	3-15
3.9.1 Land Use Categories	3-15
3.9.2 Land Use Restrictions	3-15
3.9.3 Land Use Surrounding Travis Air Force Base	3-16
3.10 Transportation System	3-16
3.10.1 Roadways/Streets	3-16
3.10.2 Other Facilities	3-17
3.11 Airspace/ Airfield Operations	3-17
3.11.1 Airfield Safety	3-17
3.11.2 60 th Air Mobility Wing	3-18
3.11.3 Tenant Units	3-18
3.12 Safety and Occupational Health	3-19
3.13 Environmental Management (Including Pollution Prevention, Geology, and Soils)	3-19
3.13.1 Pollution Prevention	3-19
3.13.2 Geology	3-20
3.13.3 Soils	3-21
3.14 Environmental Justice and Protection of Children	3-21
4.0 Environmental Consequences	4-1
4.1 Introduction	4-1
4.2 Air Quality	4-1
4.2.1 Laws and Regulations	4-1
4.2.2 Alternative 1	4-3
4.2.3 Alternative 2	4-3
4.2.4 Alternative 3	4-6
4.2.5 Alternative 4	4-7
4.3 Noise	4-8
4.3.1 Alternative 1	4-8

Contents, Continued

	Page
4.3.2 Alternative 2.....	4-8
4.3.3 Alternative 3.....	4-10
4.3.4 Alternative 4.....	4-10
4.4 Hazardous Materials, Wastes, ERP Sites, and Stored Fuels.....	4-10
4.4.1 Alternative 1.....	4-11
4.4.2 Alternative 2.....	4-11
4.4.3 Alternative 3.....	4-12
4.4.4 Alternative 4.....	4-12
4.5 Water Resources, Floodplains, and Wastewater.....	4-13
4.5.1 Alternative 1.....	4-13
4.5.2 Alternative 2.....	4-13
4.5.3 Alternative 3.....	4-14
4.5.4 Alternative 4.....	4-14
4.6 Biological Resources – Federal- and State-listed Threatened or Endangered Species	4-14
4.6.1 Alternative 1.....	4-14
4.6.2 Alternative 2.....	4-14
4.6.3 Alternative 3.....	4-15
4.6.4 Alternative 4.....	4-15
4.7 Socioeconomic Resources.....	4-15
4.7.2 Alternative 2.....	4-15
4.7.3 Alternative 3.....	4-16
4.7.4 Alternative 4.....	4-16
4.8 Cultural Resources	4-16
4.8.1 Alternative 1.....	4-17
4.8.2 Alternative 2.....	4-17
4.8.3 Alternative 3.....	4-17
4.8.4 Alternative 4.....	4-18
4.9 Land Use.....	4-18
4.9.1 Alternative 1.....	4-18
4.9.2 Alternative 2.....	4-18
4.9.3 Alternative 3.....	4-18
4.9.4 Alternative 4.....	4-19
4.10 Transportation System.....	4-20
4.10.1 Alternative 1.....	4-20
4.10.2 Alternative 2.....	4-20
4.10.3 Alternative 3.....	4-20
4.10.4 Alternative 4.....	4-20
4.11 Airspace/ Airfield Operations	4-21
4.11.1 Alternative 1.....	4-21
4.11.2 Alternative 2.....	4-21

Contents, Continued

	Page
4.11.3 Alternative 3	4-21
4.11.4 Alternative 4	4-21
4.12 Safety and Occupation Health	4-21
4.12.1 Alternative 1	4-21
4.12.2 Alternative 2	4-22
4.12.3 Alternative 3	4-22
4.12.4 Alternative 4	4-22
4.13 Environmental Management (Including Pollution Prevention, Geology, and Soils)	4-23
4.13.1 Alternative 1	4-23
4.13.2 Alternative 2	4-23
4.13.3 Alternative 3	4-23
4.13.4 Alternative 4	4-23
4.14 Environmental Justice	4-24
4.14.1 Alternative 1	4-24
4.14.2 Alternative 2	4-24
4.14.3 Alternative 3	4-24
4.14.4 Alternative 4	4-24
4.15 Indirect and Cumulative Impacts	4-24
4.16 Unavoidable Adverse Impacts	4-27
4.17 Relationship between Short-term Uses and Enhancement of Long-term Productivity	4-27
4.18 Irreversible and Irretrievable Commitment of Resources	4-27
5.0 List of Preparers	5-1
6.0 List of Agencies and Persons Consulted and/or Provided Copies	6-1
7.0 Works Cited	7-1

Appendices

A	Air Force Form 813
B	Air Force Form 1391
C	Air Emission Calculations
D	Clean Air Act Conformity Applicability Analysis for Travis Air Force Base Security Forces Armory/Combat Arms Facility
E	Proof of Publication

Contents, Continued

Page

Tables

2-1	Summary of Potential Environmental and Socioeconomic Consequences	2-4
3-1	Bay Area Air Quality Management District Attainment Status as of November 2004	3-2
3-2	San Francisco Bay Area Air Basin Exceedances of the State Ambient Air Quality Standards from 1996 through 2002	3-3
3-3	Special-status Species Potentially Occurring at Travis Air Force Base	3-12
4-1	Estimated Alternative 2 Construction and Operation Emissions	4-3
4-2	General Conformity Analysis for Alternative 2	4-5
4-3	Comparison of Alternative 2 Emissions and Emissions Inventory	4-6
4-4	Typical Construction Equipment and Composite Site Noise Levels	4-9

Figures

1-1	Travis Air Force Base Location Map	1-5
2-1	Alternative 2 – Proposed Location	2-7
2-2	Alternative 3 – Location Near Building 1370	2-9
2-3	Alternative 4 – Location Near Building 1380	2-11
3-1	Environmental Resources and Infrastructure	3-23
3-2	Drainage Basin Boundaries	3-25
3-3	Geologic Map of Travis AFB and Vicinity	3-27
3-4	Soil Types	3-29
4-1	Comparative Sound Levels	4-28

Acronyms and Abbreviations

µg/m ³	micrograms per cubic meter
Air Force	U.S. Air Force
AFB	Air Force Base
AFCEE	Air Force Center for Environmental Excellence
AMC	Air Mobility Command
APZ	Accident Potential Zone
AST	aboveground storage tank
AT/FP	Anti-Terrorism/Force Protection
BAAQMD	Bay Area Air Quality Management District
Base	Travis Air Force Base
Basin	San Francisco Bay Area Air Basin
BRPM	Base Remediation Program Manager
CAA	Clean Air Act
CAAQS	California Ambient Air Quality Standards
CARB	California Air Resources Board
CATM	Combat Arms Training and Maintenance
CDFG	California Department of Fish and Game
CEQ	President's Council on Environmental Quality
CES/CEV	Civil Engineering Squadron Environmental Flight
CFR	Code of Federal Regulations
CNEL	Community Noise Equivalent Level
CO	carbon monoxide
COC	constituent of concern
dB	decibel
DNL	day-night average sound level
EA	Environmental Assessment
EO	Executive Order

EPA	U.S. Environmental Protection Agency
ERP	Environmental Restoration Program
ft ²	square feet
LUC	land use control
NAAQS	National Ambient Air Quality Standards
NEPA	National Environmental Policy Act
NO _x	nitrogen oxide
PM ₁₀	particulate matter less than 10 microns
PM _{2.5}	particulate matter less than 2.5 microns
ppm	parts per million
range	small arms firing range
RCRA	Resource Conservation and Recovery Act
SFA/CA Facility	Security Forces Armory/Combat Arms Facility
SIP	State Implementation Plan
SO ₂	sulfur dioxide
tpy	tons per year
TCE	trichloroethene
USACE	U.S. Army Corps of Engineers
USC	U.S. Code
UST	underground storage tank
VOC	volatile organic compound

Purpose of and Need for the Proposed Action

1.1 Introduction

The U.S. Air Force (Air Force) Air Mobility Command (AMC) proposes to construct a single-story Security Forces Armory/Combat Arms (SFA/CA) Facility at Travis Air Force Base (AFB or Base) in Fairfield, California (Figure 1-1; figures are located at the end of each section). The building would provide administrative, storage, armory, and training facilities close to the nearby outdoor small arms firing range (range), which is to remain at its current location.

Travis AFB, with the support of AMC and the Air Force Center for Environmental Excellence (AFCEE), has prepared this Environmental Assessment (EA) in accordance with National Environmental Policy Act (NEPA) implementing regulations (40 Code of Federal Regulations [CFR] 1500 through 1508), Air Force Regulation 32 CFR 989, and Department of Defense directives. The purpose of this EA is to determine whether the Proposed Action (construction of an SFA/CA Facility near Building 373) and two alternatives (construction of an SFA/CA Facility near Building 1370 or Building 1380) would have significant adverse effects on the quality of the environment, when compared to the No Action Alternative.

1.2 Need for the Action

The purpose of the Proposed Action is to provide a centralized, environmentally safe area for arms training, operations, maintenance, and storage near the existing range. The training and administrative functions for the range are currently housed in antiquated buildings near the old hospital (Building 380). The following deficiencies are intended to be remedied by the Proposed Action:

- The existing Armory fails to meet security requirements for a 24-hour, manned facility for five personnel.
- The current classroom facilities are inadequate to meet range capacity, allowing only 28 out of the possible 31 students to train per class. This causes difficulties in maintaining appropriate training on required schedules.
- A room designated for weapons maintenance and parts storage does not exist. Students and/or personnel perform modifications, upgrades, and repairs to installation weapons in a training classroom that is not designed to meet the minimum standards required to safely clean weapons and dispose of hazardous waste from the cleaning process.

- The distances between the range, classroom, and storage facilities necessitates an additional 1.5 hours of class time per session to transport weapons and students to and from classrooms, storage, and the range.
- The Security Forces warehouse function is distributed among several buildings inside the explosive distance safety zone. Hazardous cargo shipments force frequent closures of the facilities, which jeopardize entire Security Force missions, causing morale problems and ultimately affecting Security Force mission accomplishment.

A new facility and parking lot would be constructed closer to the range and outside of the explosive distance safety zone to accommodate safe and efficient armory administration and training. This proposed facility would meet state environmental guidelines, such as those protecting water resources, biological resources, and health and safety, and comply with Air Force Anti-Terrorism/Force Protection (AT/FP) requirements.

1.3 Objectives of the Action

The objectives of the action are to build an adequate SFA/CA Facility to support weapons training, cleaning, and storage. The facility is to be used in conjunction with a nearby range. The proposed combat arms facility includes classroom area, administrative offices, weapons maintenance area, and storage for supplies, tools, weapons, ammunition, and targets. The facility would also serve as a Security Forces Mobility/Contingency Warehouse for bulk and bin storage of materials needed to support Base operations.

1.4 Location of Proposed Action

Travis AFB is located near the City of Fairfield in Solano County, California, and extends over approximately 6,400 acres (Figure 1-1). The Base is located off Interstate 80, approximately midway between Sacramento and San Francisco and southwest of central Fairfield.

1.5 Scope of the Environmental Assessment

This EA documents the potential, reasonably foreseeable environmental and socioeconomic effects associated with the Proposed Action and two additional alternatives, relative to the No Action condition.

1.6 Decision(s) that Must be Made

The Chairman of the Environmental Protection Committee at Travis AFB is responsible for selecting an alternative to improve armory training and storage. A decision to take no action (Alternative 1) would result in maintaining the current range and classrooms and offices at various locations on the Base and not constructing an armory and combat facility. A decision to take action would result in Travis AFB proceeding with the proposed construction of the SFA/CA Facility either near Building 373 (Alternative 2), near Building 1370 (Alternative 3), or near Building 1380 (Alternative 4).

1.7 Applicable Regulatory Requirements and Required Coordination

This environmental analysis has been conducted in accordance with the President's Council on Environmental Quality (CEQ) regulations, 40 CFR Sections 1500 through 1508, as they implement the requirements of NEPA, 42 U.S. Code (USC) Sections 4321 et seq., and Air Force Regulation 32 CFR 989, The Environmental Impact Analysis Process.

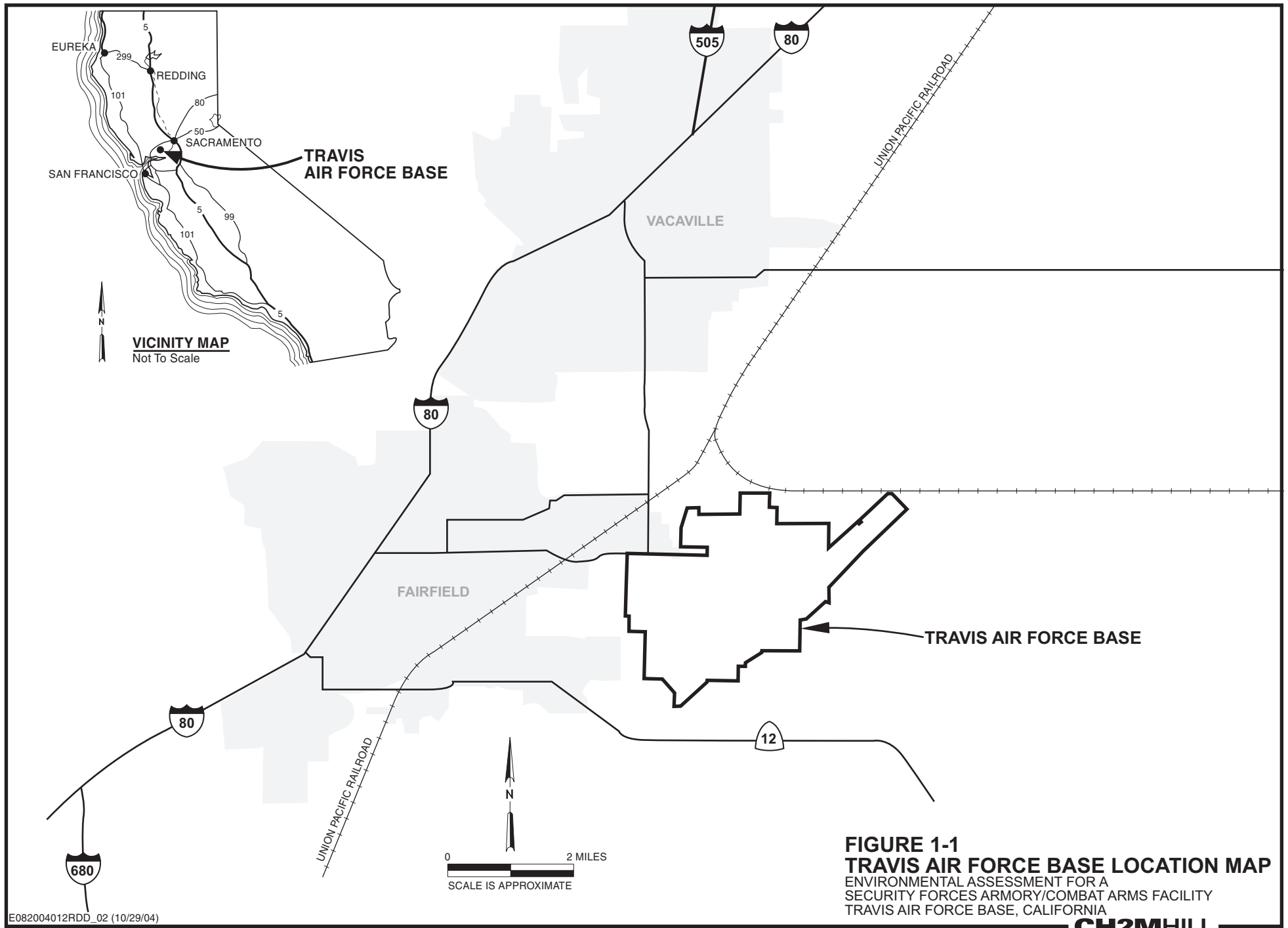
Air Force Regulation 32 CFR 989 specifies the procedural requirements for the implementation of NEPA and preparation of an EA, and directs Air Force officials to consider environmental consequences as part of the planning and decisionmaking process.

Other environmental regulatory requirements relevant to the Proposed Action and alternatives also are identified in this EA. Regulatory requirements under the following programs, among others, are assessed:

- Noise Control Act of 1972
- Clean Air Act (CAA)
- Clean Water Act
- National Historic Preservation Act
- Archaeological Resources Protection Act
- Endangered Species Act of 1973
- Resource Conservation and Recovery Act (RCRA)
- Comprehensive Environmental Restoration, Compensation, and Liability Act
- Toxic Substances Control Act of 1970
- Occupational Safety and Health Act

Requirements also include compliance with Executive Order (EO) 11988 (Floodplain Management); EO 11990 (Protection of Wetlands); EO 12898 (Federal Actions to Address Environmental Justice in Minority and Low-Income Populations); and EO 13045 (Protection of Children from Environmental Health Risks and Safety Risks).

This page intentionally left blank.



SECTION 2.0

Description of the Alternatives, Including the Proposed Action

2.1 Introduction

This section describes the alternatives analyzed in this EA (the No Action Alternative, Proposed Action, and two alternative site locations), including a presentation of the criteria used to select the alternatives.

2.2 Selection Criteria for Alternatives

To be considered a reasonable alternative, the proposed construction of a single-story SFA/CA Facility should improve armory operations and training, in a cost-efficient and effective manner, with minimal impact on human and natural resources. The No Action Alternative is carried forward for consideration in accordance with 32 CFR 989.8(d). Reasonable alternatives for armory training and storage at Travis AFB should accomplish the following:

- Meet or exceed state environmental requirements for building and parking lot construction
- Comply with Air Force and Department of Defense planning and design manuals, design standards, and safety requirements for airfield operations
- Meet minimum Department of Defense AT/FP requirements
- Provide operational flexibility, because different organizations would use this building

2.3 Alternatives Considered but Eliminated from Detailed Study

All alternatives considered are included in this EA.

2.4 Description of Proposed Alternatives

2.4.1 Alternative 1 – No Action Alternative

Under the No Action Alternative, the construction of the SFA/CA Facility would not occur and the existing facilities would continue to be used.

Building 828 is currently used as the Security Forces Armory. Eight personnel are permanently assigned to the armory to fulfill the staffing requirements of the facility, which are to have two personnel on duty 24 hours per day, seven days per week. The building is

secured by cipher lock, which is not in compliance with Department of Defense Manual 5100.76M, Physical Security of Conventional Arms, Ammunitions and Explosives.

Building 380A is currently used as the CATM facility. Ten personnel are permanently assigned to the facility. As many as 28 personnel participate in classroom training. Training sessions are 1 week long and are scheduled throughout the week. The sessions consist of several classes, each of which is 4 hours long. No parts cleaners are currently in use at the CATM facility.

2.4.2 Alternative 2 – Proposed Action: Construction of an SFA/CA Facility Near Building 373

Alternative 2 is the Proposed Action. The Air Force proposes to construct a permanent SFA/CA building and parking lot near Building 373 (Figure 2-1). The new location would be approximately 0.25 mile from the range, resulting in more efficient travel between the classroom and range. The SFA/CA site would be located along the southern portion of Vandenberg Drive, between Baker Street and Collins Drive. The building and parking lot would be separated by Vandenberg Drive. The parking lot would be approximately 0.5 acre and located north of Vandenberg Drive, and the SFA/CA building would be to the south of Vandenberg Drive. The parking lot design would include structural components for stormwater management. Portions of the Proposed Action site would be located within the boundary of Environmental Restoration Program (ERP) site LF006.

The building would have a footprint of approximately 18,126 square feet (ft²) and provide functional space within an 18,063-ft² building for classroom training, administration, supply and tool storage, weapons maintenance areas, weapons and ammunition storage, and target and miscellaneous storage. Two parts cleaners would be installed. The firing of weapons for training purposes would be conducted exclusively at the nearby range. An air conditioning system with a capacity of approximately 25 tons of cooling would be installed. The heating system would be gas-powered. The building, parking lot, and area used during construction would occupy as much as 1 acre.

The SFA/CA Facility would have the following design features:

- Reinforced concrete footings
- Exterior insulated finish system
- Metal doors and frames
- Concrete hardener floor finishes
- Fire and intrusion alarm system
- AT/FP components
- Concrete masonry unit walls
- Free-standing, seam metal roof
- Aluminum windows
- Solid-core doors
- Seismic components

The SFA/CA Facility would also be used as a mobility/contingency warehouse for bulk storage and bins of materials needed to support Base operations. Materials stored at the facility would include weapons, gear, and equipment to be issued to individuals.

Additional details about the Proposed Action are included in Appendices A and B, which contain Air Force Form 813 and the programming document, Form 1391.

2.4.3 Alternative 3 – Construction of an SFA/CA Facility Near Building 1370

Alternative 3 would be to construct an SFA/CA Facility near Building 1370, which is also used by Security Forces and is near the existing range (Figure 2-2). The building is close to the fence line, and AT/FP requirements, including setbacks from the fence line, would have to be met. Thus, the SFA/CA building would have to be built west of Building 1370 and the fence line. The existing parking lot at Building 1370 could be used and new construction would not be required. The type of structure and its size and purpose would have a similar layout, function, and design as the action proposed under Alternative 2. This location was previously used as a range.

2.4.4 Alternative 4 – Construction of an SFA/CA Facility Near Building 1380

Alternative 4 would be to construct an SFA/CA Facility near Building 1380, which is used by the Fire Department and is near the existing range (Figure 2-3). Like Building 1370, this building is close to the fence line, and AT/FP requirements, including setbacks from the fence line, would have to be met. Thus, the SFA/CA building would have to be built west of Building 1380 and the fence line on an area currently used as a leach field. The leach field is approximately 1,800 ft² and receives approximately 600 gallons of wastewater per day. The leach field consists of a system of perforated piping approximately 18 inches below ground surface, backfilled with gravel. The soil below the leach field is clay/loam and is conducive to percolation. A leach field is required because the area is remote and not connected to the Base sanitary sewer system. Locating the building here would require relocating the existing leach field (e.g., south of Collins Drive, toward the airfield) or connecting the building to the sewer line. The existing parking lot at Building 1380 could be used and new construction would not be required. The type of structure and its size and purpose would have a layout, function, and design similar to Alternative 2.

2.5 Description of Past and Reasonably Foreseeable Future Actions Relevant to Cumulative Impacts

This EA identifies actions that have been conducted in the past, are ongoing or in the planning stages, and future actions that are related to the Proposed Action. Details of the actions that could potentially interact with the Proposed Action are included in the cumulative impact analysis presented in Section 4.15.

2.6 Identification of Preferred Alternative

The Air Force's preferred alternative for this EA is the Proposed Action, as described in Section 2.4.2. This alternative best meets the selection criteria and results in fewer environmental impacts than Alternatives 3 and 4.

2.7 Comparison of the Environmental Impacts of Alternatives

Table 2-1 compares the environmental effects of the alternatives described above.

TABLE 2-1

Summary of Potential Environmental and Socioeconomic Consequences

Environmental Assessment for a Security Forces Armory/Combat Arms Facility, Travis Air Force Base, California

Resource	Environmental and Socioeconomic Consequences			
	Alternative 1 No Action	Alternative 2 Proposed Action (Preferred Alternative)	Alternative 3 Build SFA/CA Near Building 1370	Alternative 4 Build SFA/CA Near Building 1380
Air Quality	No effect ^a	Less than significant	Less than significant	Less than significant
Noise	No effect	Less than significant (construction); no effect (operation)	Less than significant (construction); no effect (operation)	Less than significant (construction); no effect (operation)
Hazardous Materials, Wastes, ERP Sites, and Stored Fuels				
Hazardous Materials	No effect	Less than significant	Less than significant	Less than significant
Wastes	No effect	Less than significant	Less than significant	Less than significant
ERP Sites	No effect	Less than significant	Less than significant	No effect
Stored Fuels	No effect	No effect	No effect	No effect
Water				
Flooding	No effect	No effect (construction); less than significant (operation)	No effect (construction); less than significant (operation)	No effect (construction); less than significant (operation)
Surface Water Quality	No effect	Less than significant (construction); no effect (operation)	Less than significant (construction); no effect (operation)	Less than significant (construction); no effect (operation)
Biological				
Vegetation and Wildlife	No effect	Less than significant (construction); no effect (operation)	Less than significant (construction); no effect (operation)	Less than significant (construction); no effect (operation)
Wetlands	No effect	No effect	No effect	No effect
Federal- and State-listed Threatened or Endangered Species	No effect	No effect	No effect	No effect
Socioeconomic	No effect	Short-term, beneficial (construction); no effect (operation)	Short-term, beneficial (construction); no effect (operation)	Short-term, beneficial (construction); no effect (operation)
Cultural	No effect	No effect	No effect	No effect

TABLE 2-1

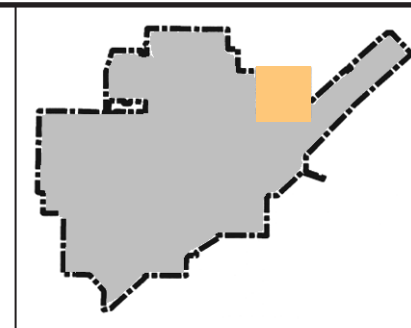
Summary of Potential Environmental and Socioeconomic Consequences

Environmental Assessment for a Security Forces Armory/Combat Arms Facility, Travis Air Force Base, California

Resource	Environmental and Socioeconomic Consequences			
	Alternative 1 No Action	Alternative 2 Proposed Action (Preferred Alternative)	Alternative 3 Build SFA/CA Near Building 1370	Alternative 4 Build SFA/CA Near Building 1380
Land Use	No effect	Less than significant	Significant ; not compatible with land use designations	Significant ; not compatible with land use designations
Transportation Systems	No effect	Less than significant (construction); minor effect (operation)	Less than significant (construction); minor effect (operation)	Less than significant (construction); minor effect (operation)
Airspace/Airfield Operations	No effect	No effect	No effect	No effect
Safety and Occupational Health	No effect	Less than significant (construction); beneficial (operation)	Less than significant (construction); beneficial (operation)	Less than significant (construction); beneficial (operation)
Environmental Management				
Pollution Prevention	No effect	Less than significant	Less than significant	Less than significant
Geology and Soils	No effect	Less than significant (construction); no effect (operation)	Less than significant (construction); no effect (operation)	Less than significant (construction); no effect (operation)
Environmental Justice	No effect	No effect	No effect	No effect
Indirect and Cumulative Impacts	No effect	Less than significant	Less than significant	Less than significant

^aUnless otherwise noted, effects listed apply to both construction and operation.

This page intentionally left blank.



LOCATION MAP

LEGEND

- ENVIRONMENTAL TEST WELLS
- BASE BOUNDARY
- PROPOSED DEVELOPMENT
- WETLANDS
- ENVIRONMENTAL CLEANUP SITES
- ACCIDENT POTENTIAL ZONE
- ELECTROMAGNETIC RADIATION BUFFER

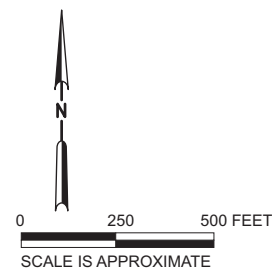
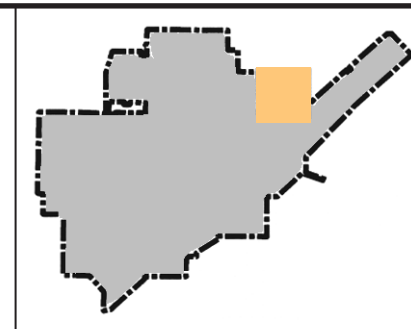


FIGURE 2-1
ALTERNATIVE 2 –
PROPOSED LOCATION
 ENVIRONMENTAL ASSESSMENT FOR A
 SECURITY FORCES ARMORY/COMBAT ARMS FACILITY
 TRAVIS AIR FORCE BASE, CALIFORNIA



LOCATION MAP

LEGEND

- ENVIRONMENTAL TEST WELLS
- BASE BOUNDARY
- PROPOSED DEVELOPMENT
- WETLANDS
- ENVIRONMENTAL CLEANUP SITES
- ACCIDENT POTENTIAL ZONE
- ELECTROMAGNETIC RADIATION BUFFER

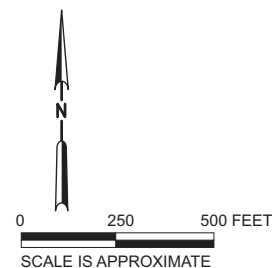
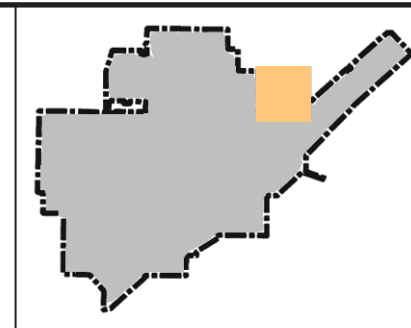
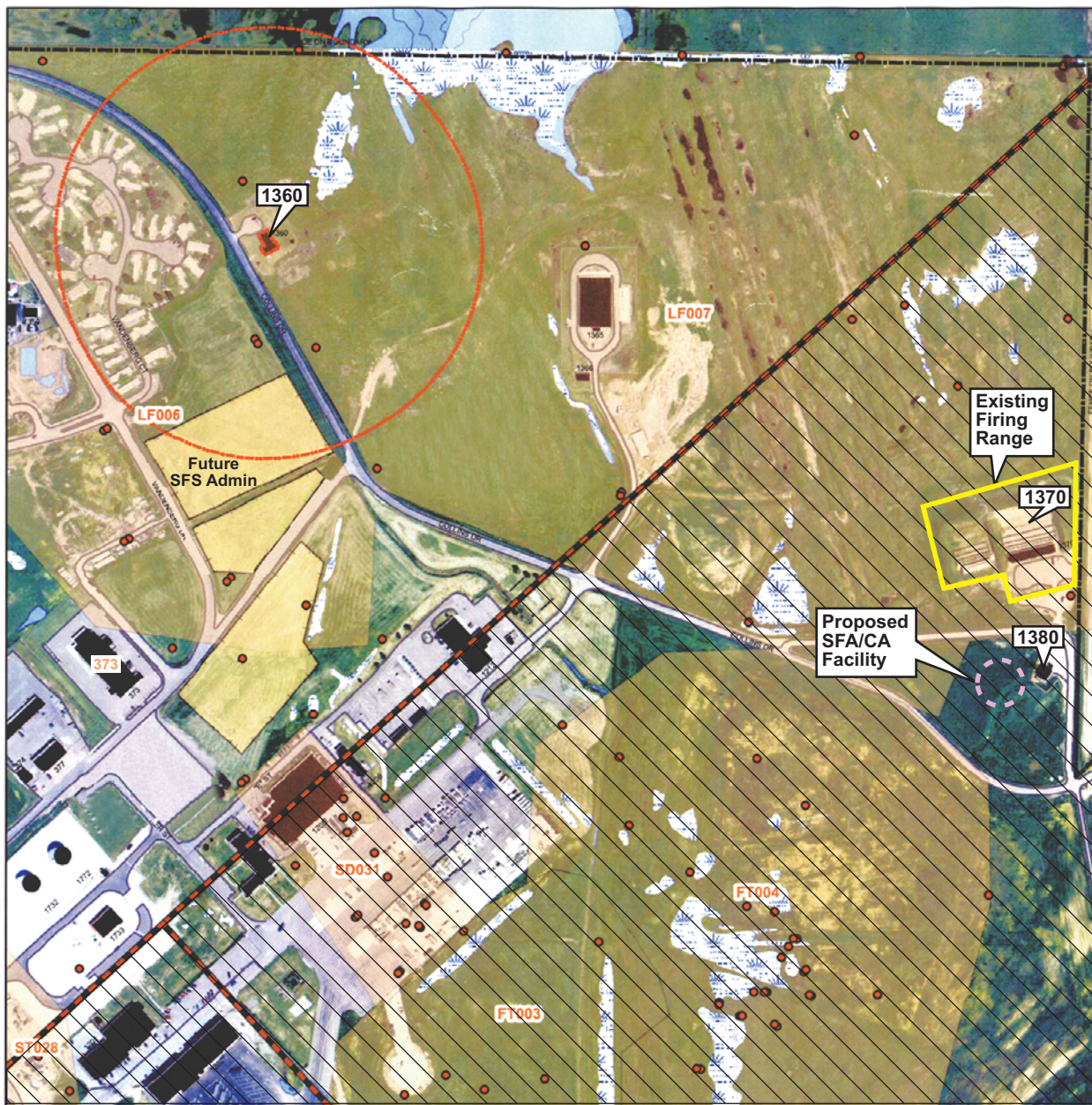


FIGURE 2-2
ALTERNATIVE 3 –
LOCATION AT BUILDING 1370
 ENVIRONMENTAL ASSESSMENT FOR A
 SECURITY FORCES ARMORY/COMBAT ARMS FACILITY
 TRAVIS AIR FORCE BASE, CALIFORNIA



LOCATION MAP

LEGEND

- ENVIRONMENTAL TEST WELLS
- ▭ BASE BOUNDARY
- ▭ PROPOSED DEVELOPMENT
- ▭ WETLANDS
- ▭ ENVIRONMENTAL CLEANUP SITES
- ▭ ACCIDENT POTENTIAL ZONE
- ▭ ELECTROMAGNETIC RADIATION BUFFER

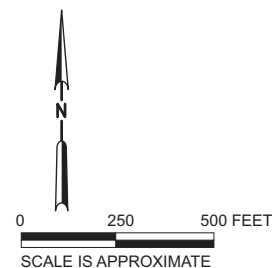


FIGURE 2-3
ALTERNATIVE 4 –
LOCATION AT BUILDING 1380
 ENVIRONMENTAL ASSESSMENT FOR A
 SECURITY FORCES ARMORY/COMBAT ARMS FACILITY
 TRAVIS AIR FORCE BASE, CALIFORNIA

Affected Environment

3.1 Introduction

This section presents specific information about the environment at Travis AFB that could be adversely affected as a result of implementing the Proposed Action or the project alternatives. Potential impacts resulting from the Proposed Action or the alternatives are described in detail in Section 4.0.

3.2 Air Quality

Travis AFB is located in central Solano County, which is at the eastern edge of the San Francisco Bay Area Air Basin (Basin). The Basin extends from Napa County in the north to Santa Clara County in the South. The Basin encompasses 5,340 square miles and 19 percent of California's population. The Basin is under the jurisdiction of the Bay Area Air Quality Management District (BAAQMD) pursuant to a mandate from the California Air Resources Board (CARB).

The purpose of this section is to provide an overview of regional air quality. The information presented in this section includes a discussion of existing meteorological and topographical conditions, applicable federal and state regulations, regional air quality management programs, and the current air quality conditions. Only the golf course at Travis AFB extends into a neighboring jurisdiction, the Yolo-Solano Air Pollution Control District.

3.2.1 Regional Climate

California has a Mediterranean climate, with wet winters and dry summers. While Travis AFB is not located near the coast, it is located near the Carquinez Straits, a major break in the Coast Range, which allows the ocean to moderate temperatures at Travis AFB. The Base usually experiences mild temperatures, with a mean annual temperature of 60 degrees Fahrenheit. The lowest temperatures occur in January, with a mean of 46 degrees Fahrenheit. The highest temperatures occur in July and August, with a mean of 72 degrees Fahrenheit. Monthly mean relative humidity typically ranges from a low of 50 percent in June to a high of 77 percent in January. The mean annual relative humidity is 60.5 percent. Precipitation is approximately 17 inches per year.

During the late summer and early fall months, Travis AFB is subject to marine air flowing from high pressure cells offshore toward low pressure in the Central Valley. Winds tend to flow from the west and range from 15 to 20 miles per hour. Winds are typically strongest in the afternoon. The Base occasionally experiences easterly winds, which are generated in the Central Valley. Winds from the Central Valley tend to have higher pollutant loads.

3.2.2 Current Air Quality Conditions

The Basin has been assessed for compliance with California and National Ambient Air Quality Standards (CAAQS and NAAQS, respectively). Three air quality designations can be given to an area for a particular pollutant, as follows:

- **Nonattainment:** This designation applies when air quality standards have not been consistently achieved.
- **Attainment:** This designation applies when air quality standards have been achieved.
- **Unclassified:** This designation applies when there is not enough monitoring data to determine whether the area is in nonattainment or attainment.

According to CARB, the Basin is designated as nonattainment for state standards for ozone, particulate matter less than 10 microns (PM₁₀, or fugitive dust), and particulate matter less than 2.5 microns (PM_{2.5}). Relevant ambient air quality standards are listed in Table 3-1, along with their respective attainment status. The Basin is designated as in attainment for nitrogen oxide (NO_x), sulfur dioxide (SO₂), carbon monoxide (CO), sulfate particulates, and lead particulates for state standards. By federal standards, the Basin is designated as nonattainment for 1-hour and 8-hour ozone. All other criteria pollutants are designated as in attainment or unclassified. In addition, the urbanized areas of Solano County (which include the area occupied by Travis AFB) are maintenance areas for CO under the *Carbon Monoxide Redesignation Request and Maintenance Plan for Ten Federal Planning Areas* (CARB, 1998). Table 3-2 lists maximum pollutant levels and number of days the CAAQS were exceeded from 1996 through 2002.

TABLE 3-1

Bay Area Air Quality Management District Attainment Status as of November 2004

Environmental Assessment for a Security Forces Armory/Combat Arms Facility, Travis Air Force Base, California

Pollutant	Averaging Time	California		Federal	
		Standard	Attainment Status	Standard	Attainment Status
Ozone	8 Hours	—		0.08 ppm	N (Marginal)
	1 Hour	0.09 ppm	N	0.12 ppm	N (Other)
CO	8 Hours	9.0 ppm	A	9.0 ppm	A (M)
	1 Hour	20.0 ppm	A	35.0 ppm	A (M)
Nitrogen Dioxide	Annual	—	—	0.053 ppm	A
	1 Hour	0.25 ppm	A	—	—
SO ₂	Annual	—	—	0.03 ppm	A
	24 Hours	0.04 ppm	A	0.14 ppm	A
	1 Hour	0.25 ppm	A	—	—
PM ₁₀	Annual Geometric Mean	20 µg/m ³	N	50 µg/m ³	A ^b
	24 Hours	50 µg/m ³	N	150 µg/m ³	U
PM _{2.5}	Annual Arithmetic Mean	12 µg/m ³	N-	15 µg/m ³	U
	24 Hours	—	—	65 µg/m ³	U

^aAnnual arithmetic mean

Notes:

N = Nonattainment

A = Attainment

M = Maintenance Area

U = Unclassified

ppm = Parts per million

µg/m³ = Micrograms per cubic meter

TABLE 3-2

San Francisco Bay Area Air Basin Exceedances of the State Ambient Air Quality Standards from 1996 through 2002
Environmental Assessment for a Security Forces Armory/Combat Arms Facility, Travis Air Force Base, California

Year	Ozone ^a		CO ^b		PM ₁₀ ^c	
	Number of Exceedance Days	Maximum Hour Conc. (ppm)	Number of Exceedance Days	Maximum Hour Concentration (ppm)	Number of Exceedance Days	Maximum 24-hour Concentration (µg/m ³)
1996	34	0.138	0	8.8	18	76
1997	8	0.114	0	10.7	20	85
1998	29	0.147	0	8.7	25	100
1999	20	0.156	0	9.0	63	117
2000	12	0.152	0	9.8	42	80
2001	15	0.134	0	7.6	51	114
2002	16	0.160	0	7.7	30	84

^aThe sampling frequency of ozone is continuous (hourly). The CAAQS for ozone is 0.09 ppm.

^bThe sampling frequency of CO is continuous (hourly). The 1-hour CAAQS for CO is 20 ppm.

^cSampling of PM₁₀ is scheduled throughout the project area once every 6 days (24-hour sample). Therefore, each station has (nominally) 60 sampling days per year. All stations have the same schedule; that is, they all attempt to sample for PM₁₀ on the same days. The number of station-sampling days per county would depend on the number of PM₁₀ stations in the county. The 24-hour CAAQS for PM₁₀ is 50 µg/m³. Comparisons with the newly adopted PM_{2.5} standards have not been made because the standards are new.

Source: CARB, 2004

Note:

Conc. = Concentration

Travis AFB is within the jurisdiction of the BAAQMD. Permits have been issued for approximately 130 stationary point sources, such as incinerator exhaust ports, and for more than 250 mobile point sources, such as portable gasoline generators (Travis AFB, 2002a). Approximately 110 sources have been declared exempt. None of the air sources have been shown to negatively impact resources on- or offbase (Travis AFB, 2003a). Compliance with BAAQMD standards and practices is detailed in the *Travis Air Force Base General Plan* (Travis AFB General Plan) (Travis AFB, 2002a).

3.2.2.1 Ozone

Attainment of the NAAQS for ozone in the Basin has remained relatively uniform over the last decade. Exceedances are generally attributed to unique meteorological patterns, combined with increases in emissions during the summer months. Urban vehicular emissions, industrial emissions, and high ambient temperatures in the Basin contribute to summer ozone generation and subsequent air standard violations.

In Solano County, CAAQS were exceeded each year from 1996 through 2002. Peak hourly average ozone concentrations ranged from 0.096 to 0.129 ppm during that time. In 2003, the peak 1-hour ozone concentration was 0.101 ppm, measured by the BAAQMD at their Tuolumne Street monitoring station in Vallejo, approximately 20 miles southwest of the Base. The air monitoring closest to the Base is the Chadbourne Road facility in Fairfield,

located approximately 10 miles to the west, also operated by the BAAQMD. No exceedances of the ozone standard were recorded at the Chadbourn Road facility in 2003.

3.2.2.2 Fugitive Dust

Fugitive dust (PM₁₀) is generated within the area largely as a result of combustion sources and wind during dry conditions (CARB, 2001). PM₁₀ levels are elevated during the winter (due to stable conditions and low mixing heights) because of wood smoke, vehicle exhaust, and dry, windy conditions. In 2002, the maximum 24-hour PM₁₀ concentration (monitored since 2001) within Solano County was 84 µg/m³. Federal 24-hour PM₁₀ concentrations have been monitored in Solano County since 1994. The 24-hour PM₁₀ NAAQS have not been exceeded since monitoring began.

3.2.3 Indoor Air Quality

Beginning in 1998, basewide studies were conducted to identify sources of radon emissions. Thirty-five locations were screened. All radon measurements were below the criteria for determining whether a detailed assessment would be required (4 picocuries per liter). Based on these studies, no further evaluation is required (Travis AFB, 2002a).

3.3 Noise

The Air Force typically uses the Air Installation Compatible Use Zone guidelines to promote compatible land use development. Noise is one consideration to be addressed under those guidelines, and accordingly, Travis AFB has assessed noise levels in relation to the flightline. The descriptor of noise typically used in California is the Community Noise Equivalent Level (CNEL). The CNEL is the average sound energy level for a 24-hour day, determined after the addition of a 5-decibel (dB) penalty to noise generated between 7:00 and 10:00 p.m. and a 10-dB penalty to noise events occurring between 10:00 p.m. and 7:00 a.m. The CNEL is calculated using the sound energy generated by individual noise events, the number of events occurring during a 24-hour period, and the time of day at which the events occur.

The majority of the Base experiences CNELs ranging from 60 to 75 dB. However, CNELs in excess of 80 dB are produced during flight operations. These noise levels are intermittent and localized to the flightline. In addition, some Base activities produce higher levels of noise than those produced by flight operations. Other than airfield operations, the only noise-producing activity located near any of the alternative sites occurs at the range associated with Building 1370.

3.4 Hazardous Materials, Waste, Environmental Restoration Program Sites, and Stored Fuels

3.4.1 Hazardous Materials and Hazardous Waste

The activities conducted at Travis AFB that use the majority of hazardous materials include maintenance of aircraft, transportation equipment, and facilities. These activities contribute approximately 95 percent of the total volume of hazardous waste generated at the Base,

including flammable solvents, contaminated fuels and lubricants, stripping chemicals, waste oils, waste paint, absorbent materials, chemicals stored beyond their expiration dates, and asbestos (Travis AFB, 2002a). Hazardous materials are ordered, stored, and used in accordance with the Base Hazardous Materials Management Plan.

The Base maintains and implements the Hazardous Waste Management Plan to comply with RCRA, state, and Air Force regulations. The Hazardous Waste Management Plan establishes the procedures, training requirements, inspections, and record management processes for hazardous waste (Travis AFB, 1999). The Base has one facility, Building 1365, permitted for long-term storage of hazardous waste. Building 1365 is managed by the 60th Civil Engineering Squadron Environmental Flight (CES/CEV) and operated by contractors (Travis AFB, 2002a).

3.4.2 Solid Waste

Nonhazardous waste generated at Travis AFB during fiscal year 2001 totaled 45.5 tons per day, or 16,600 tons for the year, including both recycled waste and waste sent to a disposal facility. The amount of recycled waste, which includes composting, mulching, recycled, reused, donated, and concrete (construction/demolition) waste, averaged approximately 20 tons per day (7,470 tons for the year). The amount of nonhazardous waste sent to disposal facility averaged approximately 25 tons per day (9,150 tons for the year) (Travis AFB, 2002a). Nonhazardous solid wastes and refuse at Travis AFB are collected and disposed of by Solano County Garbage Company. Some organic matter is incinerated onbase at one of two incinerators. All solid waste is disposed of in accordance with the Solid Waste Management Plan.

3.4.3 Environmental Restoration Program Sites

Travis AFB has several environmental cleanup sites. The Base has implemented the ERP, administered by the 60 CES/CEV Restoration Section, to remediate accident, disposal, and spill sites that might pose a potential threat to human health and welfare or the environment. ERP sites include landfills, spill areas, waste disposal sites, drum storage areas, underground storage tanks and piping, oil/water separators, waste treatment plants, and munitions disposal sites. Some ERP sites have had extraction/ remediation systems installed to facilitate site cleanup (Travis AFB, 2003a). The current SFA/CA Facility and Alternative 4 site are not located on an ERP site. The Alternative 2 and 3 sites are both located on ERP sites, LF006 and LF007. The locations of ERP sites and the alternative sites are shown on Figure 3-1.

3.4.3.1 LF006

The parking lot of Alternative 2 would be located on ERP site LF006 (Landfill 1), a former burn-and-fill landfill that was operated between 1943 and the early 1950s. The former landfill is in the northeastern corner of Travis AFB and has a size of approximately 17 acres (Travis, 2002a). Materials disposed of and burned in the landfill consisted primarily of general refuse such as wood, paper, glass, and residential and construction debris, although some disposal of industrial wastes was reported.

Extensive investigations have been conducted on the eastern side of the Base. Exposure to the constituents of concern (COC) found onsite could pose a risk to human and ecological

health. A human health risk assessment completed in 1996 for residential use of the site found risks to human health within acceptable tolerances (Radian, 1996b). The primary concern was contaminated groundwater.

The only COC consistently detected at LF006 has been trichloroethene (TCE). Concentrations are stable or declining, and in most cases have been below the interim remediation goal of 5.0 micrograms per liter for the last several years. Groundwater contamination at LF006 is contained, and the plume is not migrating (CH2M HILL, 2003).

Figure 3-1 shows the TCE distribution at wells sampled during the 2002-2003 (Groundwater Sampling and Analysis Program) monitoring period at LF006. An Interim Record of Decision was signed in December 1997. It does not contain any land use constraints.

3.4.3.2 LF007

The Alternative 3 site is located in the southeast corner of ERP site LF007 (Landfill 2). Site LF007 is approximately 73 acres, and was operated by trench-and-cover methods beginning in the early 1950s, following the closure of Landfill 1 (LF006). The landfill was used primarily for the disposal of general refuse such as wood, glass, and construction debris. Small amounts of industrial waste and fuel sludge from tank-cleaning operations were also reported to have been disposed of at Landfill 2. Use of Landfill 2 ceased in 1974.

Although ERP site LF007 contains several different COCs throughout the site, no COCs have been detected at the Alternative 3 site. COCs in groundwater upgradient of the Alternative 3 site are benzene, vinyl chloride, 1,4-dichlorobenzene, 1,1-dichloroethene, chlorobenzene, bis (2-ethylhexyl) phthalate, polychlorinated biphenyls, and 2,3,7,8-tetrachlorodibenzo-p-dioxin. No COCs were detected above interim remediation goals in any well downgradient of LF007 during the 2002-2003 Groundwater Sampling and Analysis Program monitoring period. Groundwater contamination near the Alternative 3 site is generally stable (CH2M HILL, 2003).

A site map of LF007, including the locations of monitoring wells, is shown on Figure 3-1. A Record of Decision was finalized on 11 December 2002 that designates this site as a corrective action management unit, an area designed to carry out a corrective action at Travis AFB, such as the management of contaminated soil. Section 3.9.2 provides information regarding use restrictions for the site.

3.4.4 Former Small Arms Firing Range

In addition to the range currently in use, a former small arms firing range is situated adjacent to LF007 and Building 1370. Under Alternative 3, the new building would be constructed at the location of the former range. The potential presence of contamination from heavy metals commonly found at ranges, such as lead and copper (Dermatas et al., 2003), has not been investigated.

3.4.5 Stored Fuels

Fuel is stored onbase in underground storage tanks (UST) and aboveground storage tanks (AST). Fuel is supplied to the flightline using a hydrant system that is supplied by seven bulk ASTs with a capacity of almost 7 million gallons. The hydrant fueling system is also

associated with 21 USTs and two smaller ASTs, with a combined capacity of almost 19 million gallons (Travis AFB, 2002a).

Gasoline and diesel fuel used for military vehicles and ground equipment are stored in both ASTs and USTs in various locations at the Base. There are 30 USTs currently in use and regulated by the California UST program. Activities for removal and/or replacement of 20 USTs are being conducted under the Solano County and State of California UST programs. There are also 38 deferred/exempt USTs at the Base (Travis AFB, 2002a).

3.5 Water Resources, Floodplains, and Wastewater

This section provides a description of the groundwater and surface water resources, wetlands, and floodplains at Travis AFB.

3.5.1 Groundwater

The depth to unconfined groundwater aquifers in Travis AFB varies seasonally from approximately 12 to 30 feet below ground surface. Intensive extraction of groundwater does not occur at Travis because of poor water-bearing subsurface geology. Intensive extraction occurs west of Travis AFB and Fairfield, where the alluvium is thicker and contains a greater abundance of coarse-grained sediment. Groundwater wells in the area of Travis AFB are limited to domestic, stock-watering, and irrigation wells with typical screened depths within 100 feet of ground surface (CH2M HILL, 2001). Domestic wells, several of which are downgradient from Travis AFB, are typically used to provide water to households for domestic use (CH2M HILL, 2001). Solano County does not supply water to the residences surrounding Travis AFB. The two nearest domestic wells are within 1,700 feet of the south boundary of Travis AFB.

Onbase wells are not used for potable water production. However, several wells located 4 miles north of Travis AFB, at the Cypress Lakes Golf Course (Annex 10), produce 400 to 500 million gallons of water per year. The well water is mixed with surface water purchased from the City of Vallejo to supply potable water to Travis AFB. The Fairfield public water supply field is located approximately 3 miles west of Travis AFB. The large production wells at the golf course and in Fairfield tend to be deeper, as much as 1,000 feet below ground surface, than the nearby domestic wells (CH2M HILL, 2001).

The groundwater gradient beneath Travis AFB flows to the south and follows the regional trend. The horizontal hydraulic gradient ranges from 0.003 to 0.005 vertical foot per horizontal foot in the upper portion of the aquifer (URS, 2004). In the deeper portion of the aquifer, the hydraulic gradient ranges from 0.003 to 0.10 vertical foot per horizontal foot (Air Force, 1998).

3.5.2 Surface Water

Travis AFB is located in the northeastern portion of the Fairfield-Suisun Hydrologic Basin. Within this basin, water generally flows south to southeast toward Suisun Marsh, an 85,000-acre tidal marsh that is both the largest contiguous estuarine marsh and the largest wetland in the continental United States (CH2M HILL, 2001). Suisun Marsh drains into Grizzly and Suisun Bays. Water from these bays flows through the Carquinez Straits to

San Pablo Bay and San Francisco Bay, and ultimately discharges into the Pacific Ocean near the City of San Francisco.

Travis AFB lies in the southern portion of the Union Creek watershed. The headwaters of Union Creek are located approximately 1 mile north of the Base, near the Vaca Mountains, where the creek is an intermittent stream. Union Creek splits into two branches north of the Base. Onbase, the main (eastern) branch is impounded into a recreational pond designated as the Duck Pond. At the exit from the Duck Pond, the creek is routed through an underground storm drainage system to the southeastern Base boundary, where it empties into an open creek channel.

The west branch of Union Creek flows south and enters the northwestern border of the Base, east of the David Grant Medical Center, in an excavated channel. This channel flows south and parallels Ragsdale Street for approximately 4,000 feet. Flow in the channel is then directed to a culvert under the runway and discharges to the main channel of Union Creek at Outfall II. From Outfall II, Union Creek flows southwest and discharges into Hill Slough, a wetland located 1.6 miles from the Base boundary. Surface water from Hill Slough flows into Suisun Marsh.

Union Creek is the primary surface water pathway for runoff at Travis AFB. Stormwater runoff flows into the creek through a network of pipes, culverts, and open drainage ditches. Local drainage patterns have been substantially altered within the Base by the rerouting of Union Creek, the construction of the aircraft runway and apron, the installation of storm sewers and ditches, and general development like construction of buildings, roads and parking lots. The surface water collection system divides the Base into eight independent drainage areas. The eight drainage areas are shown on Figure 3-2. Drainage ditches are located near the areas of the Proposed Action and Alternative 4, as shown on Figure 3-1. The eastern portion of the Base is served by one of the drainage systems that collects runoff from along the runway and the inactive sewage treatment plant area and directs it to Denverton Creek and Denverton Slough. Denverton Creek is an intermittent stream near the Base. The northwestern portion of the Base drains to the west toward the McCoy Creek drainage area. McCoy Creek is also an intermittent stream near the Base. The remaining six drainage areas at the Base empty into Union Creek (CH2M HILL, 2001).

3.5.3 Floodplains

The two branches of Union Creek (see Section 3.5.2) are located within the 100-year floodplain. The western branch of Union Creek, located within the floodplain, is 15,000 feet long; its depth varies from 4 to 15 feet, and its width ranges from 15 to 25 feet. The total area encompassed by the western branch of Union Creek is 8.6 acres (Travis AFB, 2003a).

Approximately 25 acres of the eastern branch of Union Creek are in the floodplain (Travis AFB, 2003a). This area includes the Duck Pond and associated riparian regions. The remaining acreage consists of 17,000 feet of Union Creek. The width of the creek along this stretch ranges from 10 to 15 feet and its depth varies from 4 to 15 feet.

Approximately 38 percent of Travis AFB consists of impervious areas. To prevent flooding, runoff from these impervious areas enters the stormwater drainage system. The Base's stormwater drainage system is designed to accommodate a 10-year, 24-hour storm (Travis AFB, 2003a).

3.5.4 Wastewater

Industrial and sanitary wastewater produced from lavatories, showers, and janitorial sinks in all buildings and from housing units are discharged to the sanitary sewer system. The system consists of more than 41 miles of steel, asbestos, concrete, and plastic gravity sewers and force mains ranging in size from 4 to 21 inches, and 10 pump stations. Sewage flows to the Fairfield-Suisun Sanitary District sewage treatment facilities via a main adjacent to the south gate. The contract between the Base and the Fairfield-Suisun Sanitary District is based on an average daily flow of 1.6875 million gallons per day. In 2001, the average daily flow from the Base was approximately 1.6 million gallons per day in fiscal year 2001, with a peak recorded flow of 2.24 million gallons per day. The Base uses a sewage overflow facility at the former wastewater treatment plant in the southwest corner of the Base. The overflow facility stores sewage during peak flows, then transmits it to the Fairfield-Suisun Sanitary District when flow volumes subside. The overflow facility consists of five basins with a combined capacity of 18.2 million gallons. Sanitary and de minimis industrial wastes are discharged from the Fairfield-Suisun Sanitation District under permit number 019711-TAFB (Travis AFB, 2002a).

Because much of the system was installed more than 40 years ago, approximately 6,800 feet of sewers are overloaded during a 5-year storm event. The overall condition of the sanitary sewer system is degraded, due to the deteriorated condition of the piping system and the severe occurrence of infiltration and inflow. The Base is currently in the process of determining the scope and timing of repair projects for the system. According to the Travis AFB General Plan, the system will not be considered adequate to meet future conditions until significant improvement projects have been completed (Travis AFB, 2002a).

3.6 Biological Resources

3.6.1 Waters of the United States

Waters of the U.S. are defined in 33 CFR 328 and are under the jurisdiction of the U.S. Army Corps of Engineers (USACE). According to a summary provided by the Sacramento District of the USACE (<http://www.sac.usace.army.mil/permits/wet.html>), waters of the U.S. include surface waters, if they meet the following criteria:

- Are susceptible to use in interstate or foreign commerce
- Cross state lines
- Consist of intrastate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds, the use, degradation, or destruction of which could affect interstate or foreign commerce including any such waters
- Are or could be used as habitat by birds protected by Migratory Bird Treaties or other migratory birds that cross state lines
- Are or could be used as habitat for endangered species

Waste treatment systems, including treatment ponds or lagoons designed to meet the requirements of the Clean Water Act are not waters of the U.S. The determination of the type and extent of a wetland is made based on a delineation according the soil, hydrology, and vegetation characteristics at a particular site.

3.6.1.1 Riparian Areas

Riparian areas are associated with the exposed banks of creeks and rivers. Riparian wetlands at Travis AFB are limited to the banks of Union Creek. The most extensive riparian wetland is located along the northern portion of the eastern branch of Union Creek, upstream of the Duck Pond (Travis AFB, 2003a). Although a few willows and coyote brush can be found along Union Creek, the dominant plant species found in the riparian zone of Union Creek are mainly herbaceous and consist of beardless wild rye (*Leymus triticoides*), broad-leaved pepperwort (*Lepidium latifolium*), Harding grass (*Phalaris aquatica*), and saltgrass. Hydrophytes, such as cattails and rushes, are also common (CH2M HILL, 2001). There are no riparian wetlands near any of the potential project sites.

3.6.1.2 Vernal Pools

Travis AFB has limited topographic relief and the clayey soils prevent rapid drainage. This swale topography leads to the formation of vernal pools. Vernal pools and vernal swales are primarily found within grassland habitat. Vernal pools are shallow depressions or small, shallow pools that fill with water during the winter rainy season, then dry out during the spring and become completely dry during the summer. Most of the vernal pools at Travis AFB are northern claypan vernal pools that occur on deep alluvial soils. Vernal swales, which are ecologically and floristically similar to vernal pools, also occur onbase. Vernal swales consist of drainways or poorly defined depressions that get inundated seasonally, but hold standing water for relatively short periods (Travis AFB, 2003a).

During the time that the vernal wetlands contain water, biotic communities develop over relatively restricted areas. Vernal pool fairy shrimp (*Branchinecta lynchi*) inhabit some of the vernal pools (Travis AFB, 2003a). Overall, 110 species of plants have been identified in vernal wetlands at the Base, including three species – akali milkvetch (*Astragalus tener* var. *tener*), Contra Costa goldfields (*Lasthenia conjugens*), and the San Joaquin spearscale (*Atriplex joaquiniana*) – that are listed by the California Native Plant Society as rare. The akali milkvetch and the San Joaquin spearscale are also listed as federal species of concern (Travis AFB, 2002a).

The vernal wetlands are found throughout the Base, but are typically absent in the highly developed central and northern areas. Vernal pool vegetation has been identified at 322 sites throughout the Base. These sites vary in size from 1 acre to less than 50 ft², and can be a single pool or swale or a large, hydrologically associated pool cluster (Travis AFB, 2003a). The vernal wetlands are concentrated along the western, southern, and southeastern boundaries of the Base. The highest quality, intact vernal pools are located on the northwestern portion of the Base. All of the surface water bodies on and in the vicinity of the Base empty into the Suisun Marsh. No springs have been recorded within the confines of Travis AFB (CH2M HILL, 2001).

3.6.1.3 Wetland Meadows

The relatively flat topography of Travis AFB and low soil permeability result in both grasslands and wetlands. In the larger areas, grasslands form; in more confined, deeper areas, wetlands form. Wetland meadows can be found throughout the Base. Some areas are used as pastures, while others are maintained by mowing or disking. Wetland meadows tend to be wet throughout the winter and spring. Grasses dominate this habitat, with Italian ryegrass (*Lolium multiflorum*) being the most common. Herbaceous wetland meadows are found along the permanent (natural or artificial) drainages at the Base and can also occur seasonally within vernal pools, swales, and ditches (Travis AFB, 2003a).

3.6.2 Special-status Species

Special-status species consist of species that are listed by the U.S. Fish and Wildlife Service or the California Department of Fish and Game (CDFG) as rare, threatened, or endangered and plant species listed by the California Native Plant Society. Table 3-3 lists special-status species potentially occurring at Travis AFB. The information for this section was taken from the Travis AFB Integrated Natural Resources Management Plan (Travis AFB, 2003a), the Travis AFB General Plan (Travis AFB, 2002a), CDFG's California Natural Diversity Database (CDFG, 2004), and the California Native Plant Society Inventory (California Native Plant Society, 2001).

3.6.2.1 Federally Listed Species

Four federally listed species have been observed at Travis AFB and eight others have the potential to occur. The following federally listed species have been identified at Travis AFB:

- Contra Costa goldfields (*Lasthenia conjugens*), a federally endangered plant species
- Vernal pool fairy shrimp (*Branchinecta lynchi*), a federally threatened invertebrate species
- Vernal pool tadpole shrimp (*Lepidurus packardii*), a federally endangered crustacean species
- California tiger salamander (*Ambystoma californiense*), a federally threatened amphibian species (CDFG, 2004)

In a 1999 study, Contra Costa goldfields (*Lasthenia conjugens*) were identified in the northwest part of the Base and at the southwest end of the main runway. The vernal pool fairy shrimp (*Branchinecta lynchi*) has been identified in several studies and is likely to be present in many of the vernal pools within the Base. A dead California tiger salamander (*Ambystoma californiense*) was found on the site of the Castle Heights housing area prior to construction (Travis AFB, 2002a).

TABLE 3-3

Special-status Species Potentially Occurring at Travis Air Force Base

Environmental Assessment for a Security Forces Armory/Combat Arms Facility, Travis Air Force Base, California

Species Common Name	Species Scientific Name	Protection Status	Presence
Plants			
Contra Costa goldfields	<i>Lasthenia conjugens</i>	FE	K
Crampton's tuctoria	<i>Tuctoria mucronata</i>	FE/SE	P
Showy Indian clover	<i>Trifolium amoenum</i>	FE	P
Colusa grass	<i>Neostapfia colusana</i>	FT/SE	P
Boggs Lake hedge-hyssop	<i>Gratiola heterosepala</i>	SE	P
Animals			
Vernal pool fairy shrimp	<i>Branchinecta lynchi</i>	FT	K
California tiger salamander	<i>Ambystoma californiense</i>	FT	K
California red-legged frog	<i>Rana aurora draytonii</i>	FT	P
Giant garter snake	<i>Thamnophis couchi gigas</i>	FT/ST	P
Delta green ground beetle	<i>Elaphrus viridis</i>	FT	P
Valley elderberry longhorn beetle	<i>Desmocerus californicus dimorphus</i>	FT	P
Vernal pool tadpole shrimp	<i>Lepidurus packardii</i>	FE	K
Conservancy fairy shrimp	<i>Branchinecta conservatio</i>	FE	P

Sources: Travis AFB, 2003a; CDFG, 2004

Notes:

FE = Federal Endangered

FT = Federal Threatened

SE = State Endangered

ST = State Threatened

K = Known to occur at Travis AFB

P = Potential to occur at Travis AFB

Although no other federally listed threatened or endangered species are known to be present at the Base (Travis AFB, 2002a), the following eight (Travis AFB, 2003a) species have the potential to occur onbase because suitable habitat is present:

- Crampton's tuctoria (*Tuctoria mucronata*), a federally endangered plant species
- Showy Indian clover (*Trifolium amoenum*), a federally endangered plant species
- Colusa grass (*Neostapfia colusana*), a federally threatened plant species
- California red-legged frog (*Rana aurora draytonii*), a federally threatened amphibian species
- Giant garter snake (*Thamnophis couchi gigas*), a federally threatened reptile species
- Delta green ground beetle (*Elaphrus viridis*), a federally threatened insect species

- Valley elderberry longhorn beetle (*Desmocerus californicus dimorphus*), a federally threatened insect species
- Conservancy fairy shrimp (*Branchinecta conservatio*), a federally endangered crustacean species

3.6.2.2 California State-listed Species

The Swainson's hawk (*Buteo swainsoni*) is known to nest onbase, and suitable habitat can be found in the annual grasslands scattered across the Base and the riparian habitat of Union Creek in the southern part of the Base (Travis AFB, 2002a). The following four species have the potential to occur at Travis AFB because suitable habitat is present:

- Boggs lake hedge-hyssop (*Gratiola heterosepala*), a state-listed endangered plant species
- Crampton's tuctoria (*Tuctoria mucronata*), a state-listed endangered plant species
- Colusa grass (*Neostapfia colusana*), a state-listed endangered plant species
- Giant garter snake (*Thamnophis couchi gigas*), a state-listed threatened reptile species

3.7 Socioeconomic Resources

Socioeconomic resources include the population, income, employment, and housing conditions of a community or region of influence. Socioeconomic conditions could be affected by changes in the rate of population growth, the demographic characteristics of a community, or employment within the region of influence caused by the implementation of the Proposed Action or the alternatives.

Travis AFB is the largest employer in Solano County, employing more than 14,000 people, including 3,494 civilians. It provides approximately 10 percent of the total local employment and has an annual payroll of \$451 million. The Base adds an annual value of \$176 million to the community by creating an estimated 5,300 indirect jobs. Travis AFB workers participate in numerous group and charity projects and contribute more than \$333,000 annually to charitable organizations. The Base's overall impact on the county and surrounding area is estimated to be in excess of \$790 million (Travis AFB, 2002a).

The Base is located in a rapidly growing part of the San Francisco Bay Area. Solano County grew at a rate 50 percent higher than the Bay Area as a whole between 1990 and 2000. During the same period, the City of Fairfield grew at twice the overall rate. This accelerated rate of growth is expected to continue, and more than 80,000 additional residents are expected to migrate to Solano County by 2010. The local communities are creating development patterns that are compatible with the Base and its mission through their local plans and ordinances (Travis AFB, 2002a).

Approximately 14 percent of the military personnel who live offbase reside in Vacaville, and another 6 percent reside within the City of Fairfield. More than 8,700 military personnel retire to the area surrounding Travis AFB (Travis AFB, 2003c).

3.8 Cultural Resources

3.8.1 Cultural History

The region in which Travis AFB is located was once inhabited by the Southern Patwin (or Wintuan) tribe of Native Americans. The early inhabitants of the region established tribelets (villages) adjacent to freshwater marshes and hunted, gathered, and fished for subsistence. The primary tribelets in a region were the Suisun and Talenas. Spanish missionaries arrived circa A.D. 1750 to find a proto-agriculture culture existing in the region (Travis AFB, 2003b). The Southern Patwin were adversely affected by mission activities, disease, and disruption by gold miners, who eventually became settlers, and had largely abandoned the area prior to epidemics of malaria and smallpox in 1833 and 1837. Descendants of the Southern Patwin currently reside in the northern part of their former range in the Sacramento Valley (URS, 2004).

The area surrounding Travis AFB is cultivated for agricultural products and grazing livestock. These activities were first performed during the Spanish Mission Period and later by Mexicans and European Americans during the Mexican Period and early American Period. The Spanish ruled the region from 1750 until the Mexican government took control in 1830. American rule replaced Mexican rule beginning in the 1840s (Travis AFB, 2003b).

The land currently occupied by Travis AFB was initially known as “poor man’s acres” and was not considered prime farmland. The first known settler, a farmer named Brinkerhoff, arrived in the 1850s. The Base site was historically used for ranching and limited irrigated farming (Travis AFB, 2003b).

Travis AFB was originally created as a temporary bomber base in 1942. The location was quickly recognized as an excellent air transport facility and was commissioned as the Fairfield-Suisun Army Air Base in 1943. In 1950, the Base was renamed after a former commander of the 9th Heavy Bombardment Wing, Brigadier General Robert Falligant Travis. Today, Travis AFB is known as “The Gateway to the Pacific” and is among the largest and busiest military air terminals in the United States.

3.8.2 Cultural Resource Investigations and Resources

Since 1909, 19 cultural resource studies have been conducted at Travis AFB or in the surrounding area. These studies identified 10 archeological sites and 27 buildings and structures on Base property that were potentially significant. Three of the 10 archeological sites were considered potentially prehistoric and the remaining seven were considered potential historic sites. All 10 sites were evaluated for eligibility for the National Register of Historic Places and were deemed not eligible. Twenty-seven buildings and structures associated with the Cold War, the only known cultural resources at Travis AFB, are potentially eligible for inclusion on the National Register of Historic Places (Travis AFB, 2003b).

The Air Defense Command Alert and Readiness area (period of significance 1952 to 1955) is located to the south of the Alternative 2 site. The Air Defense Command area contains six potentially historic buildings (369, 370, 1204, 1205, 1206, and 1212) and is potentially eligible for listing as a historic district under National Register of Historic Places Criterion C and

Criteria Consideration G. Figure 3-1 shows the location of the historic area. Buildings 370, 1204, and 1206 were demolished before a listing recommendation was made.

3.9 Land Use

Travis AFB occupies approximately 6,381 acres of land near the center of Solano County, California (Travis AFB, 2002a). The Base is located less than 5 miles east of downtown Fairfield and approximately 8 miles south of downtown Vacaville (see Figure 1-1). Solano County's population in 2000 was 394,542 (U.S. Census Bureau, 2000). This population was expected to grow to 412,336 by 2003. From 1980 to 1990, the population of Solano County increased nearly 45 percent; however, the rate of growth declined from 1990 to 2000 (16 percent) (U.S. Census Bureau, 2000) and from 2000 to 2003 (4.5 percent, estimated).

3.9.1 Land Use Categories

The land use areas of Travis AFB are grouped into eight functional categories, as follows:

- **Mission** – Uses are closely associated with the airfield and include facilities such as maintenance hangars and docks, avionics facilities, airfield clear areas, and other maintenance facilities. Aircraft operations facilities include control towers, Base operations, flight simulators, and other instructional facilities.
- **Administrative** – Uses include personnel, headquarters, legal, security forces, and other support functions.
- **Community** – Uses include both commercial and service activities. Examples of commercial uses include the Base Exchange, dining halls, service station, and clubs; service uses include the schools, chapel, library, and the family support center.
- **Housing** – Uses include both accompanied housing for families and unaccompanied housing for singles, temporary personnel, and visitors.
- **Base Support/Industrial** – Uses are for the storage of supplies and maintenance of Base facilities and utility systems.
- **Medical** – Uses include facilities for medical support, such as the David Grant Medical Center.
- **Outdoor Recreation** – Uses include ball fields, a golf course, an equestrian center, swimming pools, and other recreational activities.
- **Open Space** – Uses are for buffers between Base facilities and environmental preservation of sensitive areas.

3.9.2 Land Use Restrictions

Land use restrictions and controls are established as buffers surrounding certain facilities to protect human health from potential adverse effects. For example, protective buffer zones are designated around the munitions storage areas for accidental explosions. Land use controls (LUC) are formally in place for former landfill LF007, described in Section 3.4.2.

Travis AFB has established explosive safety quantity-distance zones to protect military and civilian population on the Base from hazards associated with the handling and/or storage of explosives. The radii of the quantity-distance arcs range from 1,250 to 2,100 feet. These zones ensure that areas where explosives are stored and/or handled (such as the munitions storage area) are separated from the following:

- Other areas containing explosives or propellants
- Petroleum, oil, and lubricant storage
- Inhabited buildings and facilities not related to explosives operations
- Aircraft parking, storage, and operation areas

On December 11, 2002, the Air Force, U.S. Environmental Protection Agency (EPA), California Department of Toxic Substances Control, and San Francisco Bay Regional Water Quality Control Board signed a Record of Decision. This legal document established the selected remedial actions for several sites with soil contamination at Travis AFB, including LF007. One of the selected remedies is the implementation of appropriate LUCs. The LUCs agreed to in Travis AFB's ERP Record of Decision are formally in place at various sites, including LF007. LUCs are primarily used to limit human activities at or near a contaminated site. They permit limited use of a property while ensuring the effectiveness of a remedial action and the protection of human health and the environment over an extended period, when contaminants remain at a site of concentrations above remediation standards that would allow unrestricted use.

3.9.3 Land Use Surrounding Travis Air Force Base

The lands surrounding Travis AFB on the northeast and east are primarily used for ranching and grazing. Areas to the south are a combination of agricultural and marshland. A few commercial/light industrial areas are present to the north of the Base. The area west of Travis AFB is predominantly residential. None of the Action Alternatives would have an impact on the land use surrounding the Base.

3.10 Transportation System

The following section describes the components of the transportation system in place at Travis AFB. Information regarding the transportation system has been summarized from the Travis AFB General Plan (Travis AFB, 2002a).

3.10.1 Roadways/Streets

The roadway network serving Travis AFB consists of several major thoroughfares, including: Travis Avenue, Ragsdale Street/Cannon Drive, Burgan Boulevard, Parker Road, Hickam Avenue, and Hangar Avenue. Ragsdale Street is a two- to four-lane road oriented in a north-south direction. Ragsdale Street is centrally located, and therefore serves much of the traffic to and from the flightlines and freight-handling areas. Minor streets branching off from these main roadways are Skymaster Drive, Broadway Street, and 1st Street, which serve as collector facilities for the Base. The Travis AFB General Plan (Travis, 2002a) does not identify traffic issues associated with the main thoroughfares, and major traffic improvement projects are not planned.

3.10.2 Other Facilities

Other facilities within Travis AFB's transportation system include the following:

- **Parking.** Parking facilities are generally associated with each building on the Base. Two areas have been identified as having either insufficient parking capacity or design flaws – the parking area that serves the Child Development Center, the mini-mall, and the Credit Union; and the parking area serving Erwin Hall.
- **Sidewalks.** Pedestrian walkways are provided in most industrial and residential areas, as well as along major roadways. There are also pedestrian walkways around the Duck Pond, located in the northeastern portion of the Base, and through the greenbelt that extends from just south of North Gate Park at Burgan Boulevard to Cannon Drive.
- **Bicycle Paths.** To keep bicycle paths separate from roadways, many facilities are shared with pedestrians. New paths are being constructed along Burgan Boulevard, Broadway Street, Hickam Avenue, and Hangar Avenue.
- **Mass Transit.** Travis AFB's "Blue Bus System" provides transportation around commercial centers as well as to and from the flightline. This system is only intended for transportation associated with work-related activities.
- **Passenger/Cargo Terminal.** The terminal is located at the south end of Burgan Boulevard and is accessed via a passenger-loading zone in front of the terminal. The terminal is scheduled to be upgraded, including improvements of the circulation system.
- **Railheads.** One rail spur connects the Base with the Union Pacific Railroad. The spur enters the Base on the east (near the Flying Club runway) and ends near Building 572. An inactive wye track is located in the tank farm area.

3.11 Airspace/Airfield Operations

Airfield operations refer to any takeoff or landing at an air base. In fiscal year 2003, the air crews at Travis flew more than 68,000 hours, hauling 300 million pounds of cargo and 93,000 passengers (Travis AFB, 2003c). Daily operations are conducted by several units stationed at the Base. These units are described below.

3.11.1 Airfield Safety

Travis AFB has established several clearance zones, in accordance with Unified Facilities Criterion 3-260-01. Clearance zones are imaginary surfaces developed to promote safe operations in the airfield vicinity, and include the following:

- **Primary Surface.** This area extends 200 feet beyond each end of the runway and 1,000 feet on both sides of the runway centerline.
- **Clear Zone.** This zone extends 3,000 feet from the end of the runway and 1,500 feet on either side of the runway centerline.
- **Accident Potential Zones (APZ) I and II.** APZ I extends 5,000 feet from the clear zone and APZ II extends an additional 7,000 feet from the edge of APZ I.

- **Approach/Departure Clearance Surface.** This surface was established to ensure safe landing/takeoff of aircraft at Travis AFB. The inclined plane, which is 2,000 feet wide at one end of the runway and 16,000 feet wide at the opposite end, extends 50,000 feet outward from the runway, at a slope of 50:1 along the runway centerline, to an elevation of 500 feet above ground surface. Activities are limited in this area to ensure safe aircraft operation. Restricted activities include those that penetrate the clearance surface; those that would release substances that could reduce visibility or impair the pilot's vision (smoke, dust, light emissions) into the atmosphere; those that produce emissions that could impact aircraft operation (communication or navigational equipment); and those that could attract birds.
- **Transitional Imaginary Surface.** The transitional surface is an inclined plane extending outward and upward, beginning at 1,000 feet from the runway centerline, at right angles to the centerline at a slope of 7:1.
- **Taxiway Clearance Line.** This zone extends 200 feet from the taxiway centerline. There are to be no obstacles, fixed or mobile, within this zone.

The area of the Proposed Action is not located in an airspace or airfield operations area. However, the locations suggested under Alternatives 3 and 4 are located in an APZ. Unified Facilities Criterion 3-260-01 states that, to meet specific airspace/airfield operations criteria, construction must be more than 1,000 feet from the runway centerline, and constructed structures should be less than a 7:1 ratio from the 1,000-foot line. Air Force Instruction 32-7084 lists the compatibility of various land uses with the different types of zones surrounding the airfield.

3.11.2 60th Air Mobility Wing

The 60th Air Mobility Wing is the host unit at Travis AFB, and operates the C-5 Galaxy cargo aircraft (21st and 22nd Airlift Squadrons) and the KC-10 Extender refueling aircraft (6th and 9th Airlift Squadrons) (Travis AFB, 2002a). The mission of this strategic unit is "to provide quality services and support for America's Global Reach through a responsive and flexible combat-ready air mobility force." The unit is capable of providing cargo, passenger, and patient airlift (including troop and equipment deployment and humanitarian support) in addition to aerial refueling. The unit is divided into four groups, as follows:

- 60th Maintenance Group
- 60th Medical Group
- 60th Operations Group
- 60th Mission Support Group

3.11.3 Tenant Units

The 349th, a reserve unit, is the primary tenant unit at Travis AFB, and also operates the C-5 Galaxy cargo aircraft and the KC-10 Extender refueling aircraft (Travis AFB, 2002a).

Other tenant units include the following:

- The U.S. Army Reserve Division, 3rd Brigade, 91st Division
- The AMC Band of the Golden West
- The Area Defense Council
- 15th Expeditionary Mobility Task Force
- The 615th Air Mobility Operations Group
- The U.S. Navy Fleet Air Reconnaissance Squadron THREE Detachment, Travis (flying the E-6A Mercury)
- Air Force Auxiliary Civil Air Patrol, Travis Composite Squadron 22
- The 373rd Training Squadron, Training Detachment 14 (Air Education and Training Command)

3.12 Safety and Occupational Health

Safety and occupational health are managed by BioEnvironmental.

Construction site safety and accident prevention are ongoing activities for any Air Force job site. As part of the contracts for construction services, standard terms and conditions include safety as a priority. Areas of concern include compliance with regulations typical to construction projects, such as confined-space regulations, handling of hazardous materials, minimum personal protection equipment standards, and limited access to the construction area.

3.13 Environmental Management (Including Pollution Prevention, Geology, and Soils)

The following sections describe the regional geology of Travis AFB, soil types present, and Pollution Prevention Plans that are in place at the Base.

3.13.1 Pollution Prevention

Travis AFB has an active Pollution Prevention Program that strives to reduce the generation of wastes through a hierarchy of actions ranging from the preferred choice of source reduction to recycling, treatment, and finally disposal, as a last resort. The Pollution Prevention Management Action Plan defines the framework to accomplish these actions. The Pollution Prevention Management Action Plan analyzes processes that use hazardous materials and generate hazardous waste streams, then evaluates options to reduce the volume and/or toxicity of generated wastes. This program includes minimizing wastes generated by ERP sampling activities.

3.13.2 Geology

Travis AFB is located on the western edge of the Sacramento Valley segment of the Great Valley Geomorphic Province. The Coast Range Geomorphic Province, which consists of folded and uplifted bedrock mountains, lies just to the west of Travis AFB (Thomasson et al., 1960; Olmsted and Davis, 1961).

The land surface structure (geomorphology) of Travis AFB is characterized by gently sloping alluvial plains and fans. These coalescing, low-relief fans were deposited by Ulati, Union, Alamo, Laurel, and Suisun Creeks. Most of the alluvial material was deposited prior to the last period of glaciation during the Pleistocene Epoch, and is referred to as Older Alluvium. During the last 15,000 years, as sea levels have risen, the drainages have refilled with alluvium. This material is referred to as Younger Alluvium. Some topographic relief in the form of very low ridges is provided by outcroppings of sedimentary rock in the Travis AFB area.

Figure 3-3 is a geologic map illustrating the distribution of shallow bedrock units and alluvium in the vicinity of Travis AFB. Bedrock at Travis AFB consists of consolidated to semiconsolidated sedimentary rock.

Uplift of the Coast Ranges and sedimentary deposition in adjacent basins continued throughout the Pleistocene Epoch, and formed the current Fairfield-Suisun Hydrologic Basin. Travis AFB is located on an alluvial fan that extends from the Vaca Mountains to Suisun Marsh. The alluvium in the vicinity of Travis AFB originated from the erosion of the elevated bedrock formations and subsequent deposition in various continental environments. Sediment eroded from the Vaca Mountains has been carried in several streams (e.g., Union Creek) which have migrated laterally across the Base.

At Travis AFB, the overall thickness of the alluvium ranges from 0 to approximately 70 feet, but is generally less than 50 feet. West of Travis AFB, the thickness of the alluvium increases to more than 200 feet (Thomasson et al., 1960).

Past tectonic processes folded and uplifted the bedrock to form the hills and mountains located north, west, and south of Travis AFB. Outcrops of relatively resistant Markley Sandstone, Domengine Sandstone, and Tehama Formation form most of the topographic high points on the Base.

Travis AFB is located within the San Francisco Bay region, a region that is susceptible to frequent earthquake activity. The U.S. Geological Survey concluded that there is a 70 percent probability of at least one magnitude 6.7 or greater earthquake, capable of causing widespread damage, striking the San Francisco Bay region before 2030 (Travis AFB, 2002a).

The Vaca Fault system, shown on Figure 3-3, traverses the eastern portion of the Base. A potentially more devastating fault, the Green Valley Fault, is located 10 miles west of the Base. The other and more prominent fault zones in the San Francisco Bay region are the San Andreas, the Hayward, and the Calaveras Faults, which are located 20 miles or more from the Base (Travis AFB, 2002a).

3.13.3 Soils

Soil develops from geologic material exposed at the earth's surface as the material is altered through physical, chemical, and biological processes. The nature of a soil is in part a function of climate, surface slope, time of exposure at the surface, and the type of original (parent) material. Soils in the vicinity of Travis AFB are classified as alfisols, which are primarily silt and clay loams that exhibit low permeabilities and poor drainage characteristics.

A soil map depicting the distribution of soil types for Travis AFB and its vicinity is provided on Figure 3-4.

3.14 Environmental Justice and Protection of Children

EO 12898 (1994) requires each federal agency to “make achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high human health or environmental effects of its programs, policies, and activities on minority populations and low income populations.” A minority population can be described as being composed of people who identify themselves to the U.S. Census Bureau as American Indian or Alaskan Native, Asian or Pacific Islander, Black or African American, or of Hispanic origin, and where such population exceeds 50 percent of the population in an area or where the minority population percentage of the affected area is meaningfully greater than the minority population percentage in the general population (CEQ, 1997).

Each year, the U.S. Census Bureau defines the national poverty thresholds, which are measured in terms of household income and the number of persons within the household. Individuals falling below the poverty threshold (\$18,810 for a household of four in 2003) are considered low-income individuals (U.S. Census Bureau, 2004).

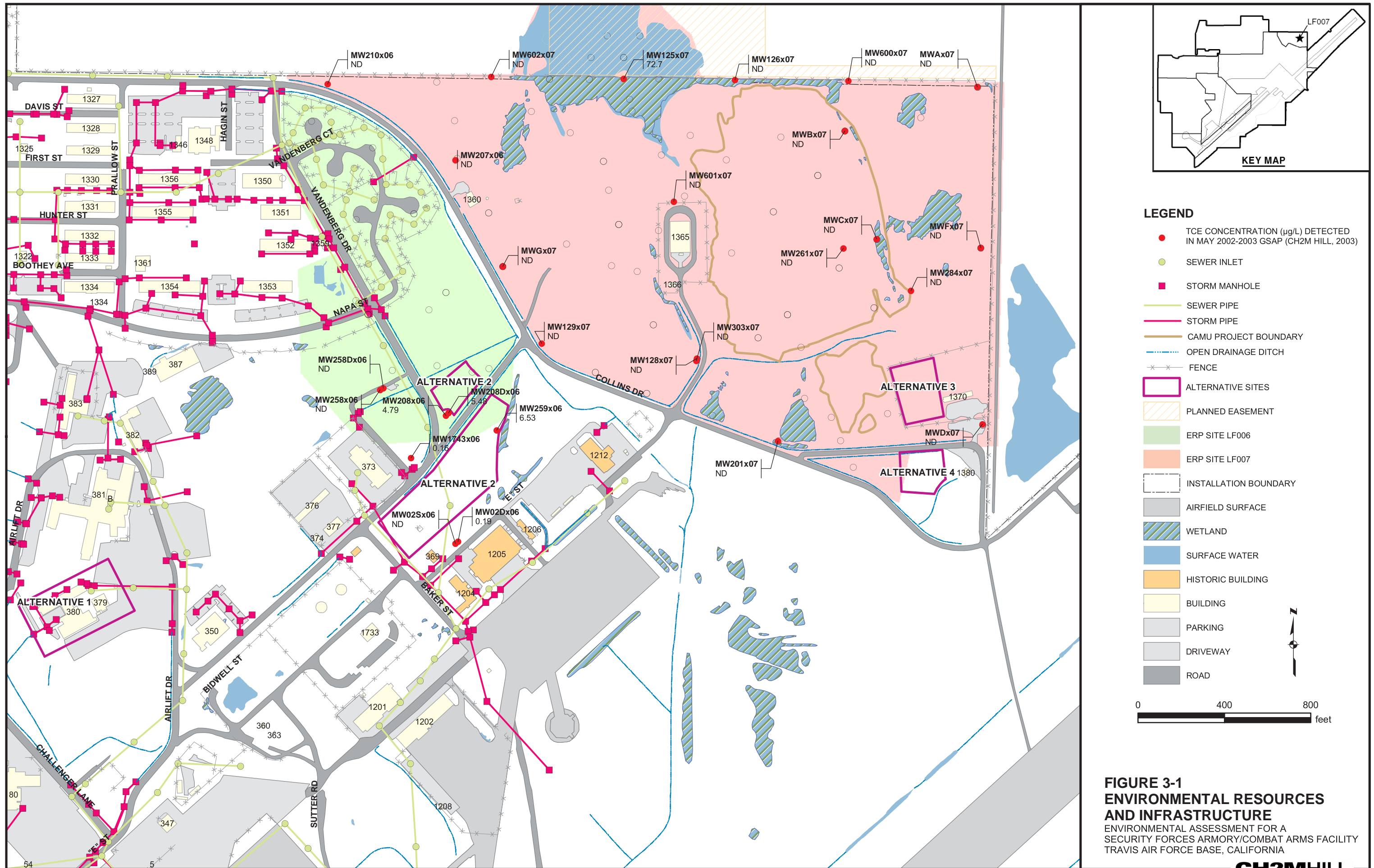
Solano is a large, demographically diverse county, with communities ranging from the urban areas of Vallejo and Fairfield in the southwest to small rural towns, such as Dixon and Rio Vista. The 2000 Census population of Solano County was 394,542, with 56.4 percent White (222,387 people) and 14.9 percent (58,827 people) described as African American; 17.6 percent of the county's population is Hispanic. The percentage of individuals in Solano County below the poverty level was 8.3 (31,344 people) (U.S. Census Bureau, 2000).

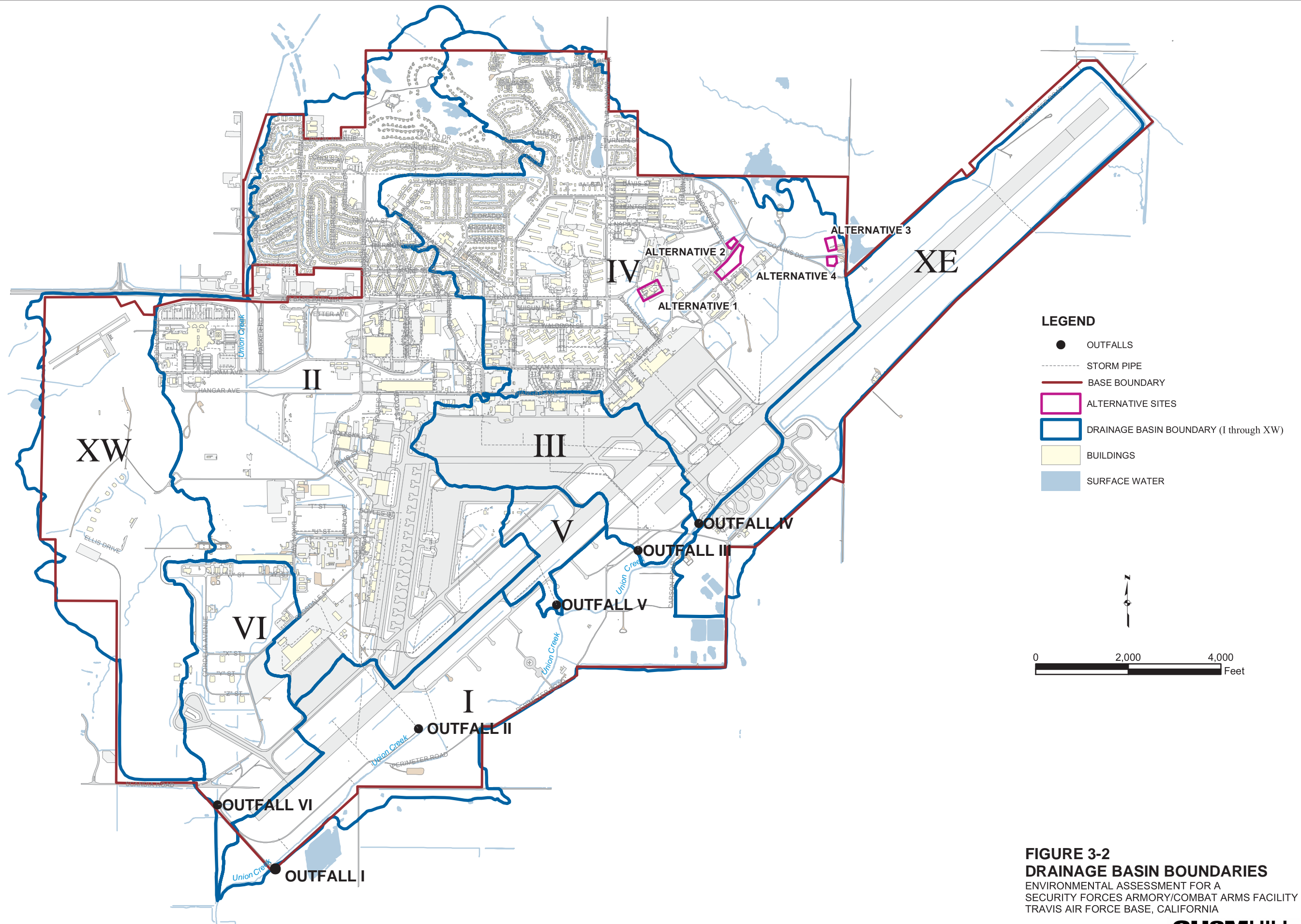
The City of Vallejo, the largest city in Solano County, has approximately 30 percent (116,760 people) of the county's population. Vallejo is more diverse than the county as a whole, with a population that is 36 percent White, 23.7 percent African American, and 15.9 percent Hispanic. Approximately 10 percent of individuals in Vallejo are at or below the poverty level. Fairfield is the second largest city (96,178 people) in the county and the closest city to Travis AFB. Fairfield more closely reflects the cultural composition of the county. The greater part of the population in Fairfield is White (56.2 percent; 54,063 people), with lower percentages of Hispanic (18.8 percent; 18,050 people) and African American (15.0 percent; 14,446 people). Approximately 9.3 percent of individuals live at or below the poverty level (U.S. Census Bureau, 2000).

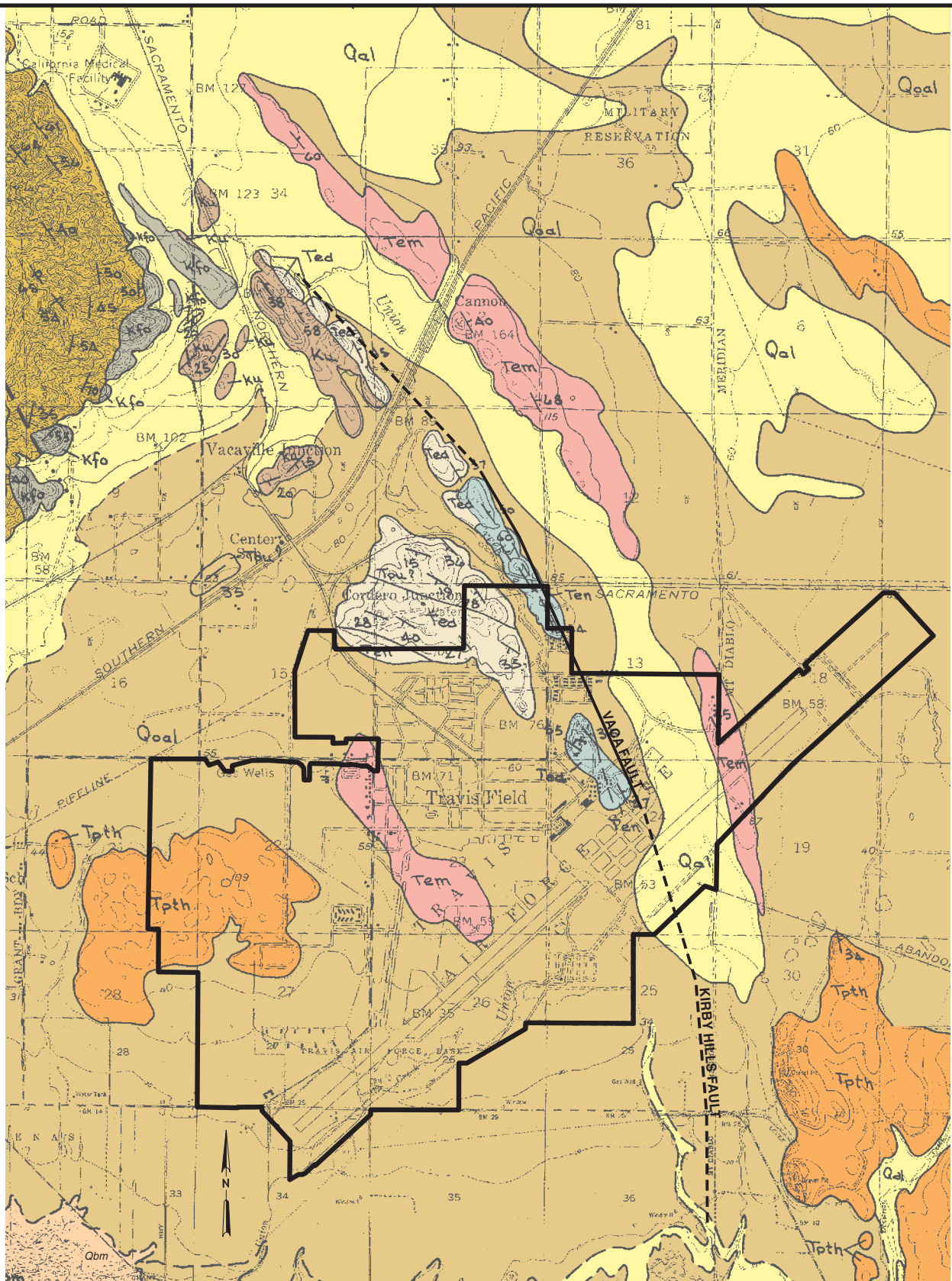
The resident population of the Base was 11,598 in 2003 (Travis AFB, 2003c). Although demographic data for Travis AFB was not available, the racial composition of the Air Force

serves as an approximation of the racial composition of the Base. In 2003, the Air Force was 75.2 percent White, 15.6 percent African American, and the remaining 9.2 percent was composed of other races (Air Force, 2003).

Children are present on Travis AFB in family housing, child development centers, the Travis youth center, schools, and playgrounds (Travis AFB, 2004).







LEGEND

- | | |
|--|---|
| Qal-YOUNGER ALLUVIUM | Ten-NORTONVILLE SHALE |
| Qbm-BAY MUD | Ted-DOMENGINE SANDSTONE |
| Qoal-OLDER ALLUVIUM | Tpu-UNNAMED FORMATION |
| Tpth-TEHAMA FORMATION | Kfo-FORBES FORMATION |
| Tem-MARKLEY SANDSTONE | Kg-GUINDA FORMATION |

FIGURE 3-3
GEOLOGIC MAP OF
TRAVIS AFB AND VICINITY
 ENVIRONMENTAL ASSESSMENT FOR A
 SECURITY FORCES ARMORY/COMBAT ARMS FACILITY
 TRAVIS AIR FORCE BASE, CALIFORNIA



SOURCE: TRAVIS AIR FORCE BASE GENERAL PLAN (TRAVIS AFB, 2002)

**FIGURE 3-4
SOIL TYPES**
ENVIRONMENTAL ASSESSMENT FOR A
SECURITY FORCES ARMORY/COMBAT ARMS FACILITY
TRAVIS AIR FORCE BASE, CALIFORNIA

Environmental Consequences

4.1 Introduction

This section provides the regulatory background, as applicable, for the various environmental resource areas and evaluates potential impacts resulting from construction and operation of the proposed SFA/CA Facility at the Alternative Action sites. The potential impacts to the human and natural environments were evaluated by comparing the Proposed Action and its alternatives to the existing environmental baseline conditions described in Section 3.0. The subsection for each environmental resource or issue assesses the anticipated direct and indirect impacts, considering both short- and long-term effects of Alternatives 2 through 4.

As described in the following subsections, no significant adverse environmental impacts are anticipated for construction of the SFA/CA Facility.

4.2 Air Quality

4.2.1 Laws and Regulations

4.2.1.1 Federal

The U.S. Congress adopted the CAA in 1970, and its amendments in 1977 and 1990. The CAA and amendments are the body of federal laws that require EPA and the states to regulate air pollution emissions from stationary and mobile sources to protect public health and welfare. Air quality regulations were first promulgated with the CAA, and revised with the Clean Air Act Amendment. They are published in 40 CFR Sections 50 through 97 and 1048 through 1068.

The CAA requires EPA to establish and maintain NAAQS, used to manage air quality across the country. Pollutants for which standards have been established are termed “criteria” pollutants, because the standards are based on criteria that show a relationship between pollutant concentrations and effects on health and welfare. From this relationship, EPA establishes acceptable pollutant concentrations to serve as ambient air quality standards. As mandated by the CAA, EPA has established maximum threshold standards for the following criteria pollutants: CO, PM₁₀ and PM_{2.5}, ozone, nitrogen dioxide, SO₂, and lead. Federal clean air laws require areas with unhealthy levels of ozone, CO, nitrogen dioxide, SO₂, and inhalable particulate matter to develop plans, known as the State Implementation Plan (SIP), describing how they will attain NAAQS (see California, below).

Under the conformity provisions of the Clean Air Act Amendment, no federal agency can approve or undertake a federal action, or “project,” unless it has been demonstrated to conform to the applicable SIP. These conformity provisions were put in place to ensure that federal agencies would contribute to efforts to attain the NAAQS. The EPA has issued two conformity guidelines: transportation conformity rules that apply to transportation plans

and projects and general conformity rules that apply to all other federal actions. A conformity determination¹ is only required for the alternative that is ultimately selected and approved. The general conformity determination is submitted in the form of a written finding, issued after a minimum 30-day public comment period on the draft determination.

Applicable only in areas designated as nonattainment or maintenance for NAAQS, the general conformity rule prohibits any federal action that does not conform to the applicable air quality attainment plan or SIP. General conformity applicability analysis requires quantification of direct and indirect, construction, and operation emissions for the action, and comparison of these emission levels to baseline emission levels. If the differences in emissions (the net emissions associated with the Proposed Action) exceed the general conformity de minimis levels for the peak year or any milestone year for attainment of standards, additional general conformity determination is required.

An action is exempt from the conformity rule (presumed to conform) if the total net action-related emissions (construction and operation) pass two tests: they are less than the de minimis thresholds established by the conformity rule, and they are not regionally significant (emissions are regionally significant if they exceed 10 percent of the total regional emission inventory). An action that produces emissions that exceed conformity thresholds, or is regionally significant, is required to demonstrate conformity with the SIP through mitigation or other accepted practices.

The CAA also requires preconstruction review of facilities and equipment that could potentially emit air contaminants. Permitting depends on the size of the emission source and its location in an attainment or nonattainment area. The BAAQMD is the agency with permitting authority in western Solano County (see Bay Area Plans and Programs, below).

4.2.1.2 California

The California Clean Air Act, approved in 1988, requires local air districts to develop and implement strategies to attain California's ambient air quality standards. CARB oversees California air quality policies. CAAQS were established in 1969 pursuant to the Mulford-Carrell Act. These standards are generally more stringent than the NAAQS, and limit four additional pollutants, including sulfates, hydrogen sulfide, vinyl chloride, and visibility-reducing particulates (see Table 3-1).

The SIPs required by federal law are not single documents; they are a compilation of new and previously submitted plans, programs (such as monitoring, modeling, and permitting), district rules, state regulations, and federal controls. CARB is the lead agency for all purposes related to the SIP. Local air districts and other agencies, such as the Bureau of Automotive Repair, prepare SIP elements and submit them to CARB for review and approval. CARB forwards SIP revisions to EPA for approval and publication in the Federal Register.

¹A conformity determination is a process that demonstrates how an action would conform to the applicable implementation plan. If the emissions cannot be reduced sufficiently, and if air dispersion modeling cannot demonstrate conformity, then either a plan for mitigating or a plan for offsetting the emissions would need to be pursued.

4.2.1.3 Bay Area Plans and Programs

As indicated previously, CARB is responsible for regulating air quality in California. The BAAQMD implements standards and policies set forth by CARB. The BAAQMD rules and regulations apply to sources of emissions within the nine-county Bay Area region, including western Solano County. The Bay Area Air Quality Plan is a regional plan that addresses how the San Francisco Bay Area will attain NAAQS and CAAQS. The plans and regulations require that new and modified stationary emission sources must apply for air quality permits, and if applicable, implement control measures and install emission-control devices.

4.2.2 Alternative 1

Under the No Action Alternative, construction would not take place and air pollutant emissions associated with construction would not be generated. Emissions from operations, including travel to the site, would not change from current conditions.

4.2.3 Alternative 2

The Proposed Action would have temporary, short-term adverse impacts on air quality as a result of construction emissions. All construction-related impacts are expected to be local (i.e., confined to the construction site area), limited to the duration of the construction activities, and, therefore, less than significant.

Long-term adverse impacts would be limited to operation emissions from the two new parts cleaners and the space heating system at the new SFA/CA Facility. The increase in mobile emissions would be negligible because the Proposed Action would not increase the trips or vehicle miles traveled to the SFA/CA Facility during its operation.

4.2.3.1 Construction and Operation Emissions

Table 4-1 summarizes the projected total air emissions during construction and operation of the proposed SFA/CA Facility.

TABLE 4-1

Estimated Alternative 2 Construction and Operation Emissions

Environmental Assessment for a Security Forces Armory/Combat Arms Facility, Travis Air Force Base, California

Emission Type	Annual Emissions (tpy)			
	VOC	NO _x	CO	PM ₁₀
Construction	0.7	9.6	2.1	0.7
Operation				
Heating system	0.02	0.4	0.4	0.03
Parts Cleaner	0.01	NA	NA	NA
Operation Subtotal	0.03	0.4	0.4	0.03

Note:

tpy = tons per year

Construction Emissions. The construction of the SFA/CA Facility would be conducted entirely during calendar year 2006. Construction emissions are expected to occur as a result of engine exhaust from added vehicles trips of construction workers and offroad construction equipment, including earth-moving equipment and trucks. These emissions

would primarily consist of NO_x, particulate matter, CO, and volatile organic compounds (VOC). Emissions of SO₂ from construction are not expected to be significant, because Travis AFB would use low-sulfur-content diesel fuel for the construction equipment.

Construction emissions of NO_x, VOCs, CO, and PM₁₀ for the Proposed Action were calculated according to the methodology provided in Chapter 9 of the *CEQA Air Quality Handbook* (South Coast Air Quality Management District, 1993) because BAAQMD does not list emission factors for construction projects. Emission factors from Table 9-1, for “Industrial” facilities, were used. These emission factors include onsite construction equipment and worker travel.

The estimated construction emissions are 0.7 tpy of VOC, 9.6 tpy of NO_x, 2.1 tpy of CO, and 0.7 tpy of PM₁₀. Detailed construction emission calculations are provided in Appendix C.

Operation Emissions. Operation emissions from the Proposed Action would come from the two new parts cleaners and the boiler for the heating system. The emission increases from vehicles would be negligible, because neither the number of personnel operating the new SFA/CA Facility nor the travel distance to the facility are expected to increase from current levels. Participation in classes would increase from approximately 28 to 31 attendees due to increased classroom capacity; however, all attendees would be current Base staff. Therefore, the Proposed Action would not increase the trips and vehicle miles traveled to Travis AFB, and emission increases associated with the additional attendees would not be expected.

Emissions from New Parts Cleaners. The cleaning solvent to be used during the operation of parts cleaners at the new SFA/CA Facility would cause VOC emissions. Travis currently operates 10 parts cleaners with average VOC emissions of approximately 10 pounds per year, per parts cleaner. It is assumed that the average annual VOC emission from the two new parts cleaners would be the same as for the existing ones. Consequently, the VOC emissions from the two new parts cleaners are estimated to be 21 pounds per year. Detailed emission calculations for the parts cleaners are provided in Appendix C.

Emissions from New Boiler. The heating system would use a natural-gas-fired boiler with a rated heat input of 203,000 British thermal units per hour. Operation of the boiler would be intermittent. Most of the operating hours would be during the 4-month heating season of November 15 through March 15, for approximately 8 hours per day. Operation at other times would be rare.

To estimate an upper limit, emissions were calculated using the assumption that the boiler would operate 24 hours per day, 365 days per year. This approach resulted in much higher emissions than those that would be expected from the actual operating hours.

The boiler emission factors for NO_x, VOC, CO, and PM₁₀ were obtained from Tables 1.4-1 and 1.4-2 of Chapter 1 in *Supplement D of Compilation of Air Pollutant Emission Factors, Volume I: Stationary Point and Area Sources* (EPA, 1998). Emissions of SO₂ from the boiler are not expected to be significant because the boiler would use natural gas fuel for its operation. The estimated emissions from the boiler are 0.02 tpy of VOC, 0.4 tpy of NO_x, 0.4 tpy of CO, and 0.03 tpy of PM₁₀. Actual emissions would be much lower than these amounts because the operating hours used in the calculations were much higher than the anticipated operating hours. Detailed calculations of the boiler emissions are provided in Appendix C.

4.2.3.2 General Conformity

The CAA established a number of programs and permitting processes designed to protect and improve air quality. Section 176(c) of the CAA Amendment of 1990, 42 USC Section 7506(c), established a conformity requirement for federal agencies, which has been implemented by 40 CFR 93, Subpart B. A general conformity applicability analysis for the Proposed Action has been performed (see Appendix D) and is summarized here.

The Proposed Action would be located in the Basin in Solano County, which attains or is unclassified for all except the 1-hour and 8-hour ozone NAAQS. For these pollutants, the area is classified as nonattainment (other) and nonattainment (marginal), respectively. The urbanized areas of Solano County (which include the area occupied by Travis AFB) are maintenance areas for carbon monoxide under the *Carbon Monoxide Redesignation Request and Maintenance Plan for Ten Federal Planning Areas* (CARB, 1998). In these areas, the ozone precursor emissions, NO_x and VOCs, and CO are subject to general conformity requirements. In accordance with the air conformity requirements of 40 CFR Sections 51.853 and 93.153(b)(1), the de minimis threshold for such ozone nonattainment areas is 100 tpy per ozone precursor pollutant (NO_x and VOC), per federal action. The de minimis threshold for a CO maintenance area is 100 tpy per federal action.

The annual emission increases associated with the Proposed Action and the de minimis thresholds are shown in Table 4-2. Emissions of VOCs, NO_x, and CO during construction and operation of the proposed SFA/CA Facility are all far below the de minimis thresholds of 100 ton per year for each of the three applicable pollutants.

TABLE 4-2
General Conformity Analysis for Alternative 2
Environmental Assessment for a Security Forces Armory/Combat Arms Facility, Travis Air Force Base, California

Emission Type	Annual Actual Emissions (tpy)		
	VOC	NO _x	CO
Construction (2006)	0.7	9.6	2.1
Operation (2007 and after)	0.03	0.4	0.4
De Minimis Threshold	100	100	100

4.2.3.3 Regional Significance

When the total emissions of the nonattainment and maintenance criteria pollutants do not exceed the de minimis threshold, the emissions must then be compared to the air quality emissions inventory of the air basin to determine the regional significance of the federal action. If the emissions amount is greater than 10 percent of the emissions inventory, the federal action is considered regionally significant for that particular pollutant (40 CFR Part 93 Subpart 153[i]).

Table 4-3 compares the net emissions from construction and operation of the Proposed Action with the Basin emissions inventory. NO_x and VOC emissions inventory data were obtained from the *San Francisco Bay Area Ozone Attainment Plan for the 1-hour National Ozone Standard* (BAAQMD, 2001). CO emissions inventory data were obtained from the *Final Carbon Monoxide Redesignation Request and Maintenance Plan for Ten Federal Planning Areas* (CARB, 1998). The potential increase in emissions of VOCs, NO_x, and CO for both

construction and operation are far below the 10 percent threshold. Therefore, the proposed project is not considered regionally significant.

TABLE 4-3

Comparison of Alternative 2 Emissions and Emissions Inventory

Environmental Assessment for a Security Forces Armory/Combat Arms Facility, Travis Air Force Base, California

	VOC	NO _x	CO
Basin Emissions Inventory	162,425	191,625	692,040
Construction Emissions (2006)	0.7	9.6	2.1
Percent of Emissions Inventory	0.0004	0.005	0.0003
Basin Emissions Inventory	162,425	191,625	626,340
Operation Emissions (2007 and after)	0.03	0.4	0.4
Percent of Emissions Inventory	0.00002	0.0002	0.00006

Notes:

Emissions are listed in tpy.

Basin emissions inventory data for NO_x and VOCs were obtained from *San Francisco Bay Area Ozone Attainment Plan for the 1-hour National Ozone Standard* (BAAQMD, 2001). Emissions inventory data for 2006 were used for both the construction and operation emissions comparisons.

Basin emissions inventory data for CO were obtained from the *Final Carbon Monoxide Redesignation Request and Maintenance Plan for Ten Federal Planning Areas* (CARB, 1998). Emissions inventory data for 2005 were used for the construction emissions comparison, and data for 2010 were used for the operation emissions comparison.

4.2.3.3 New Source Review

Installation and operation of the parts cleaners and heating system under the Proposed Action would result in less than significant impacts to air quality. The two parts cleaners would require permits, unless they fall under exemptions per BAAQMD Regulation 2-1-118. Travis AFB would either select the cleaner sizes or types that are exempt from permits, or the cleaners would be operated within permitted parameters.

The new boiler would be exempt from permit requirements because its rated heat input would be less than 1 million British thermal units per hour (BAAQMD Regulation 2-1-114).

4.2.4 Alternative 3

Under Alternative 3, the same building would be constructed on a currently vacant lot, but at a different location. A parking lot would not need to be constructed, eliminating emissions (compared to Alternative 2) resulting from construction activities and operation of vehicles and equipment during construction of this feature. Emissions for operations of Alternative 3 would be similar to those described above for Alternative 2. During operation of the building, employees and trainees would have to drive a longer distance to the SFA/CA Facility, because it is located farther east than the site proposed under Alternative 2. Overall driving distance to the range would remain the same as under current conditions.

4.2.4.1 General Conformity

General conformity requirements under Alternative 3 would be the same as for Alternative 2.

4.2.4.2 Construction Activities

Potential impacts to air quality resulting from construction activities for Alternative 3 would be reduced to less than significant through implementation of BAAQMD measures.

4.2.4.3 Vehicles and Stationary Sources

Emissions associated with operation of construction vehicles for Alternative 3 would be slightly greater than indicated for Alternative 2. The Alternative 3 site is located approximately 0.4 mile from the location of the Proposed Action. In addition, facility employees would travel a greater distance to work compared to Alternative 2. However, emissions would be reduced because the parking lot to be built under Alternative 2 would not be necessary for Alternative 3.

Emissions calculated for Alternative 2 are far below the de minimis thresholds; calculations for Alternative 3 would yield similar results, because the greater distance and elimination of the parking construction would approximately offset each other. Therefore, implementation of Alternative 3 would result in only incremental changes to emissions calculations, and would not result in exceedance of de minimis thresholds.

4.2.4.4 New Source Review

The New Source Review determination and permitting requirements would be the same as those described above for Alternative 2.

4.2.5 Alternative 4

Emissions for operation of Alternative 4 would be similar to those described above for Alternative 3. The same building would be constructed on a currently vacant lot, but at a different location. During operation of the building, employees and trainees would have to drive a longer distance to the CATM facility because it is located farther east than the site proposed under Alternative 2. Overall driving distance to the firing range would remain the same as current conditions.

4.2.5.1 General Conformity

General conformity requirements under Alternative 4 would be the same as for Alternative 2.

4.2.5.2 Construction Activities

Potential fugitive dust impacts to air quality resulting from construction activities for Alternative 4 would be reduced to less than significant through implementation of BAAQMD measures.

4.2.5.3 Vehicles and Stationary Sources

Emissions resulting from construction and operation of vehicles and stationary sources would be the same as those described under Alternative 3.

4.2.5.4 New Source Review

The New Source Review determination and permitting requirements would be the same as those described above for Alternative 3.

4.3 Noise

This section describes noise impact criteria and discusses potential project-related noise impacts. Potential future project-related noise impacts were determined by analyzing anticipated changes in noise exposure attributable to the Proposed Action and its alternatives at identified noise-sensitive locations. Project-related noise exposure changes would likely result from construction activities under the Proposed Action. After construction, no change in noise levels is anticipated during use or operation.

The fundamental measure of sound levels is expressed in dB, using a logarithmic scale. Noise is generally defined as sound that is undesirable for the following reasons:

- It is intense enough to damage hearing
- It interferes with speech communication and sleep
- It is annoying

The Federal Interagency Committee on Urban Noise has developed land use compatibility guidelines for noise, and provides recommended noise ranges for various land use categories based on the committee's findings. The Air Force has established land use noise compatibility criteria consistent with those published by the Federal Interagency Committee on Urban Noise in its publication, *Guidelines for Considering Noise in Land Use Planning and Control* (1980). CNEL values of 60 dB and less are generally compatible with all types of land uses; 60 dB is the incompatibility threshold for residential and other noise-sensitive land uses, including schools, hospitals, and religious facilities. Commercial, industrial, and other types of recreational land uses (e.g., sports arenas, golf courses, and amusement parks) are generally considered compatible with yearly CNEL ranges between 70 and 75 dB, if measures are incorporated into the design and construction of structures associated with these land uses. Some transportation (e.g., railways and airports) and manufacturing (e.g., mining, nonlivestock agriculture, fishing, and forestry) land uses can tolerate yearly CNEL ranges in excess of 85 dB. For comparison, the noise generated by a power lawnmower at 50 feet is 90 dB and the threshold for pain is 120 dB. Figure 4-1 shows some common activities and their corresponding dB levels.

Current SFA/CA operations and the three potential sites are located near the flightline, and typically experience CNELs above 70 dB (Travis AFB, 2003). No significant additional noise would be generated by the proposed SFA/CA Facility or any activities at the facility.

4.3.1 Alternative 1

Under the No Action Alternative, construction would not occur and, therefore, no construction noise would result. Current operational noise levels are confined to the building and are not expected to change. The background CNEL at this alternative site is between 70 and 75 dB (Travis AFB, 2002a).

4.3.2 Alternative 2

Typical construction-related noise is expressed in terms of schedule, equipment used, and types of activities. Under the Proposed Action, the noise level would vary during the construction period, depending on the construction phase. Construction can generally be

divided into the following five phases, in which different types of construction equipment are used (EPA, 1971; Barnes et al., 1977; Miller et al., 1978):

1. Site preparation and excavation
2. Concrete pouring
3. Steel erection
4. Mechanical
5. Cleanup

The EPA Office of Noise Abatement and Control and the Empire State Electric Energy Research Company have extensively studied noise from individual pieces of construction equipment and different types of construction sites (EPA, 1971; Barnes et al., 1977). Use of these findings is conservative, because, since these studies, public concerns about the adverse effects of noise have resulted in the inclusion of noise controls in construction-equipment design.

Table 4-4 lists the expected noise levels 50 feet from the site during construction, according to the types of construction activities that might occur during construction. The table includes the construction equipment with the potential to result in the greatest noise levels during each phase of construction. Table 4-4 also lists the long-term composite average or equivalent site noise level (which represents noise from all equipment). The composite levels are occasionally lower than the individual levels because the loudest pieces of equipment would not be operating continuously throughout the construction phase.

TABLE 4-4

Typical Construction Equipment and Composite Site Noise Levels

Environmental Assessment for a Security Forces Armory/Combat Arms Facility, Travis Air Force Base, California

Construction Phase	Loudest Construction Equipment	Equipment Noise Level (dB) at 50 feet	Composite Site Noise Level (dB) at 50 feet
Site Preparation and Excavation	Dump Truck	91	89
	Backhoe	85	
Concrete Pouring	Truck	91	85
	Concrete Mixer	85	
Steel Erection	Derrick Crane	88	89
	Jackhammer	88	
Mechanical	Derrick Crane	88	84
	Pneumatic Tools	86	
Cleanup	Rock Drill	98	79
	Truck	91	

Sources: EPA, 1971; Barnes et al., 1977

Noise dissipates by atmospheric attenuation as it travels through the air. Other factors that can affect the amount of attenuation are ground surface, foliage, topography, and humidity. Each time the distance from a noise source doubles, the level can be expected to decrease by approximately 6 dB. Noise associated with construction activities would be temporary, occur during daytime hours, and vary in levels, depending on the sources in use and types of activities. Noise associated with flightline activities at the Alternative 2 site is approximately 70 to 75 dB CNEL (Travis AFB, 2002a). There are no sensitive receptors near the Alternative 2 site and the closest building is more than 250 feet away. Noise levels are expected to be at or below background levels by the time they reach any offsite receptors,

and would not approach 65 dB at the nearest noise-sensitive receptor. Construction activities are not expected to result in significant noise impacts.

4.3.3 Alternative 3

Construction activities and noise generation levels at the Alternative 3 site would be identical to those discussed for Alternative 2. Noise from construction activities would be temporary, occur during daytime hours, and vary in levels, depending on the sources in use and types of activities.

Noise impacts for this alternative site would be attributable to flightline activities, and would reach a CNEL of approximately 80 dB (Travis AFB, 2002a). Background noise levels affecting the SFA/CA Facility at this alternative site would also be generated at the adjacent facility, the range at Building 1370. Building 1370 is located within 1,500 feet of the flightline and produces loud noises, so precautions are in place to protect occupants from extraneous noise. No extra precautions should be needed for the minor increase in noise resulting from construction at the Alternative 3 site.

At times, noise from the flightline and the range might occur concurrently. At other times, occupants of the SFA/CA Facility would be subjected to either one noise source or no noise, depending on the level of activity at the flightline and the range. Standard operating procedures for operations within an area with CNEL levels exceeding 80 dB would be applied to this Alternative site to ensure that noise levels would be less than significant.

There are no receptors sensitive to noise near the Alternative 3 site; therefore, no impacts to this population group are expected from construction noise. The closest building, other than the range, is more than 250 feet away. It is expected that construction noise would dissipate to background levels before reaching this building. Construction is not expected to result in significant noise impacts.

4.3.4 Alternative 4

Construction activities and noise generation levels at the Alternative 4 site would be identical to those discussed for Alternative 2. Building 1380 is located adjacent to the Alternative 4 site and within 1,500 feet of the flightline, so precautions are in place to protect occupants from extraneous noise. No extra precautions should be needed for the minor increase in noise resulting from construction at the Alternative 4 site.

Noise impacts to neighboring facilities, including sensitive receptors, generated during operation of the SFA/CA Facility would be identical to those described for Alternative 3. Construction is not expected to result in significant noise impacts.

4.4 Hazardous Materials, Wastes, ERP Sites, and Stored Fuels

The U.S. Congress passed RCRA in 1976 to protect both human health and the environment from the mishandling of solid and hazardous waste and to encourage the conservation of natural resources. RCRA requires a system for managing hazardous and universal wastes. Regulations adopted by the EPA in 40 CFR Sections 260 through 279 carry out RCRA's congressional mandate. Regulations in Title 22 of the Code of California Regulations, Article 4.5, closely mirror those contained in the RCRA regulations (URS, 2004).

Travis AFB has procedures in place for handling and disposing of wastes, hazardous materials, and fuels. The procedures are detailed in the following guidelines:

- Air Force Instruction 32-7086, Hazardous Materials Management (Air Force, 1997)
- Air Force Instruction 32-7042, Solid and Hazardous Waste Compliance (Air Force, 1994)
- Travis AFB Hazardous Waste Management Plan (Travis AFB, 1999)
- Travis AFB Environmental Flight Policy for Contractors (Travis AFB, 2002b)

All project alternatives would comply with these procedures. All project alternatives would generate hazardous waste. Lubricants, cleaning solvents, and rags are used during weapons maintenance, and are disposed of as hazardous waste.

Under Alternatives 2, 3, and 4 the amount of hazardous material used and hazardous waste generated during weapon cleaning activities would increase slightly, because two new parts cleaners would be installed and the number of attendees per training class would increase from 28 to 31. Allowing hazardous waste to come into contact with people or the environment could have a significant impact on human or environmental health. Compliance with waste management procedures would reduce potential impacts to less than significant levels.

No project sites are located on or near any stored fuel locations; therefore, impacts to stored fuel locations are not anticipated for any of the alternatives.

4.4.1 Alternative 1

Implementation of the No Action Alternative would not result in changes to current waste production or waste management practices.

4.4.2 Alternative 2

4.4.2.1 ERP Site

Alternative 2 would involve construction occurring partially within the boundaries of ERP site LF006. Figure 3-1 shows that the parking lot and part of the building would be located within the boundaries of LF006. Construction under Alternative 2 could disturb contaminated groundwater during excavation (e.g., digging for footings or for installation of utilities). However, construction-related impacts to groundwater are not anticipated because groundwater depths at Travis AFB generally range from 12 to 30 feet below ground surface. Prior to construction, the following measures would be implemented:

- Consult with the Base Remediation Program Manager (BRPM) prior to construction.
- Obtain a dig permit (60 AMW Form 55).
- Prepare a contingency plan outlining steps to be taken in case soil discoloration or hydrocarbon vapors were detected or groundwater were encountered during construction. The contingency plan would be reviewed by the BRPM prior to construction.

If contaminated materials were encountered during construction, protective measures would be implemented based on direction from the BRPM and potential impacts to human health and the environment from the existing contamination would be less than significant.

4.4.2.2 Potential Presence of Former Landfill Trenches

Former landfill trenches are known to exist north of the project location for the Proposed Action. No landfill trenches are known to exist within the footprint of the Proposed Action. Only the area on which the parking lot would be built could potentially have undiscovered landfill trenches. It is not anticipated that construction of the parking lot would disturb former landfill portions. If landfill debris were discovered during construction, the contingency plan would be implemented. If the parking lot were built on former trenches and this was not discovered during construction, the weight of the lot and vehicles would likely not result in differential settlement and subsequent impacts. Therefore, impacts to parking lot construction from possible landfill trenches would be less than significant.

4.4.3 Alternative 3

Alternative 3 would involve construction within the boundaries of ERP site LF007. The ERP site was once a landfill, and has been designated a corrective action management unit. The Alternative 3 building site also was previously used as a firing range.

COCs have been detected in the surface soils adjacent to the Alternative 3 site and in groundwater northwest of the site. COCs could be present in the surface soil at or on the north and west boundaries of the site (Radian, 1996a). Because the ERP site was once a landfill, subsurface soils could also contain COCs. The COC contamination in groundwater is generally nonmigratory (CH2M HILL, 2003).

The COCs could pose a risk to human and ecological health if organisms were exposed. This alternative would involve disturbing surface soils for grading. Subsurface soils would be disturbed during excavation of trenches for sewer pipelines and connections. Institutional controls, specifically LUCs, apply to all of ERP site LF007. Section 4.9.3 provides a discussion of the LUCs.

While the presence of contamination at the former range has not been investigated, construction under Alternative 3 it is possible that the soil is contaminated with heavy metals. Therefore, construction has the potential to disturb contaminated soil during grading and excavation (e.g., for installation of utilities), which could result in potentially significant impacts. The BRPM would be consulted prior to construction regarding measures to be taken that would be protective of human health and the environment. Implementation of the measures required by the BRPM would reduce potential impacts to less than significant levels.

4.4.4 Alternative 4

Construction activities associated with Alternative 4 would comply with waste management procedures. This site does not have any known soil or groundwater contamination.

Alternative 4 would be constructed over the existing leach field, which would be abandoned in place. The SFA/CA Facility would be built using slab-on-grade construction, and no settling or other engineering impacts to the facility are anticipated. A new, slightly larger leach field would be constructed for the new facility and Building 1370, or the facilities would be connected to the Base's sanitary sewer system. Because the site does not have any known contamination, construction of the building and new sanitary facilities would not result in hazardous waste impacts. Abandoning the leach field in place would, over time,

result in improvements over existing conditions because wastewater flow to the leach field would cease. Construction of a new, slightly larger leach field would only incrementally increase the amount of wastewater percolating into the ground compared to current conditions, but this increase would be minimal and less than significant.

4.5 Water Resources, Floodplains, and Wastewater

The following analysis is based on a review of the available literature and the application of professional judgment. None of the alternatives are located within the 100-year floodplain and none of the drainage ditches adjacent to the alternative sites have been determined jurisdictional waters of the U.S. (Travis AFB, 2002a and 2003a; CH2M HILL, 2003). None of the alternatives would use groundwater or release water in a way that could impact groundwater. No significant impacts to floodplains or groundwater are expected from any of the project alternatives. The alternative sites are located in drainage basin IV, as depicted on Figure 3-2. Historically, there has been no flooding at any of the sites, and the stormwater drainage system adjacent to each site is hydraulically adequate (CH2M HILL, 2000).

4.5.1 Alternative 1

If Alternative 1 were selected, no changes to water resources or to the stormwater drainage system would occur.

4.5.2 Alternative 2

The Alternative 2 site is currently an open field. As shown on Figure 3-1, the only water resources located on and adjacent to the site are unlined drainage ditches that are part of the Base stormwater drainage system (Travis AFB, 2002a and 2003a; CH2M HILL, 2003).

4.5.2.1 Flooding

The new SFA/CA Facility would increase the amount of impervious material at the site, decreasing stormwater infiltration rates and increasing the quantity of stormwater runoff in the immediate area. A previous study of the stormwater drainage system suggested that the flooding in drainage basin IV was a result of discharges from the Duck Pond that exceeded the capacity of the downstream system to adequately convey stormwater (CH2M HILL, 2000). Compared to stormwater volumes currently being produced in other portions of drainage basin IV, the additional stormwater volume from this project is considered minimal. Travis AFB has conducted studies of the stormwater drainage system and is planning future activities to address stormwater drainage system deficiencies (Travis AFB, 2002a). Because the increase in stormwater runoff from the Proposed Action would be minimal and improvements to the stormwater drainage system are being considered to address existing conditions, impacts to the stormwater drainage system and the potential for increases in flooding volumes or durations would be less than significant.

4.5.2.2 Water Quality

Construction would potentially produce short-term impacts to the drainage ditch, and ultimately to Union Creek, from erosion during earth-moving activities. The Base currently has a stormwater permit and a stormwater pollution prevention plan. Non-point-source stormwater discharge at the Base is regulated under the Travis AFB Industrial Activities Storm Water Discharge Permit. A dig permit (60 AMW Form 55) would be acquired prior

to construction. The project would comply with all applicable restrictions set forth in the stormwater permit, the stormwater pollution prevention plan, and the dig permit. Best Management Practices would be implemented in accordance with these permits to prevent erosion. Compliance with the relevant permits and implementation of Best Management Practices would reduce impacts from construction activities or stormwater discharges on Union Creek to less than significant levels.

4.5.3 Alternative 3

The Alternative 3 site is currently an open field that was previously a small arms firing range. As shown on Figure 3-1, there are no known water resources at the site (Travis AFB, 2002a and 2003a; CH2M HILL, 2003). Drainage ditches are located adjacent to the site. Under Alternative 3, a building would be constructed for the facility, but construction of a parking lot would not be required. Therefore, potential construction-related and operational impacts to flooding and water quality would be the same types, but proportionately less than those described for Alternative 2.

4.5.4 Alternative 4

Impacts resulting from implementation of Alternative 4 would be of the same types discussed for Alternative 2. However, because the parking lot required under Alternative 2 would not be required under Alternative 4, the impact resulting from an increase in impervious surfaces would be proportionately less.

4.6 Biological Resources – Federal- and State-listed Threatened or Endangered Species

This section analyzes the potential for adverse impacts to biological resources, such as habitat loss, from implementation of the No Action Alternative and the Proposed Action.

4.6.1 Alternative 1

Under the No Action Alternative, the construction of an SFA/CA Facility would not occur and the existing practices would continue. The No Action Alternative would not result in construction or other changes to the physical environment.

4.6.2 Alternative 2

The Alternative 2 site is currently an open field. As shown on Figure 3-1, there are no known wetlands (i.e., riparian, vernal pools or meadows) located on the site (Travis AFB, 2002a and 2003a; CH2M HILL, 2003). Surveys conducted in 1994, 1995, and 2001 to determine the potential presence of special-status flora, fauna, or habitats did not identify any special-status species present at the site.

The only potential waters of the U.S. associated with this alternative are a few wetlands, east and south of the proposed location. These would not be directly impacted during construction. Exclusion fencing and an environmental monitor would be used to keep construction equipment away from these areas. Standard BMPs (e.g., silt fencing) would also be used to avoid impacts to the adjacent wetlands.

Paving the site would eliminate current vegetation (i.e., grass and other herbaceous plants) and use of the site by wildlife for foraging and hunting. Areas to the north and east of the site also consist of open fields and are restricted to uses because they are located within ERP sites or near the flightline. Therefore, the areas remain available to use by wildlife and impacts to vegetation and wildlife from the Proposed Action would be less than significant.

4.6.3 Alternative 3

Under Alternative 3, the SFA/CA Facility building would be constructed, but a parking lot would not be required. Neither wetlands nor special-status species or their habitats have been identified at this site. Construction of this alternative would have no impact on wetlands or special-status species. Impacts to vegetation and wildlife would be as described for Alternative 2.

4.6.4 Alternative 4

Impacts would be the same as under Alternative 3.

4.7 Socioeconomic Resources

The socioeconomic conditions of the region could be affected if implementation of the Proposed Action or its alternatives caused changes in the rate of population growth, the demographic characteristics of the Base or Solano County, or employment or economic activity onbase or in the county. This section evaluates the potential impacts to socioeconomic resources.

4.7.1.1 Alternative 1

Selection of the No Action Alternative would result in no changes to the socioeconomic resources at the Base or to Solano County.

4.7.2 Alternative 2

Implementation of Alternative 2, the Proposed Action, would have a minor, temporary impact on socioeconomic resources because it would require a temporary increase of approximately 100 civilian contract employees (construction workers) at the Base. Given the ample supply of construction labor in the region, it is anticipated that construction workers would commute to the work site and would not require temporary housing. The Proposed Action would not result in any long-term change in Base employment. The personnel who currently operate the SFA/CA Facility would operate the new facility. The Proposed Action would not result in any change in onbase or regional populations.

The expenditure of approximately \$3.6 million for the proposed construction project would be minor compared to ongoing construction activities in the region, and would have no appreciable effect on the regional economy. However, there would be minor, short-term economic benefits to local convenience businesses from construction workers purchasing meals, gas, and other commodities in the vicinity of the Base. The impacts to socioeconomic conditions from temporary employment would be beneficial, but negligible compared to the Base or county economy.

4.7.3 Alternative 3

The impacts under Alternative 3 would be similar to those described under Alternative 2. The number of workers might be lower because construction of a parking lot is not part of this alternative. However, if special site preparation is required to build on a former munitions site, the decrease in workers for parking lot construction might be offset by an increase in workers needed for site preparation. The impacts to socioeconomic conditions from temporary employment would be beneficial, but negligible compared to the Base or county economy.

4.7.4 Alternative 4

The impacts of Alternative 4 would be the same as those described under Alternative 3.

4.8 Cultural Resources

The following laws and regulations govern cultural resources management at Travis AFB (Travis AFB, 2003b):

- Antiquities Act of 1906 (16 USC Sections 431 through 433; 34 Stat. 225)
- National Historic Preservation Act of 1966, as amended (16 USC Section 470)
- Native American Graves Protection and Repatriation Act of 1990 (25 USC Sections 3001 through 3013)
- Archaeological Resources Protection Act of 1979 (16 USC Sections 470aa through 47011)
- Archaeological and Historic Data Preservation Act of 1974 (16 USC Sections 469 through 469c)
- American Indian Religious Freedom Act of 1978, as amended (42 USC Sections 1996 and 1996a)
- NEPA (42 USC Sections 4321 through 4370c)
- Air Force Instruction 32-7065, Cultural Resources Management
- Protection of Historic Properties (36 CFR Section 800)
- National Register of Historic Places (36 CFR Sections 60, 61, 63, and 68)
- World Heritage Convention (36 CFR Section 73)
- Waiver of Federal Agency Responsibilities under Section 110 of the National Historic Preservation Act (36 CFR Section 78)
- Curation of Federally-Owned and Administered Archeological Collections (36 CFR Section 79)
- Preservation of American Antiquities (43 CFR Section 3)
- Protection of Archaeological Resources (43 CFR Section 7)

- Native American Graves Protection and Repatriation Act (43 CFR Section 10)
- Secretary of the Interior's Standards and Guidelines for Archeology and Historic Preservation
- Legacy Resource Protection Program Act of 1992 (Public Law No. 101-511, Section 8120)
- Protection and Enhancement of the Cultural Environment (EO 11593)
- Accommodation of Sacred Sites (EO 13007)
- Consultation and Coordination with Indian Tribal Governments (EO 13175)

The primary statutes requiring federal agencies to protect cultural resources are the National Historic Preservation Act, EO 11593, the Archaeological and Historic Preservation Act, and the Archaeological Resources Protection Act (URS, 2004). The Cultural Resource Manager, under the supervision of the Environmental Flight Chief, is responsible for managing natural and cultural resources at Travis AFB.

4.8.1 Alternative 1

Currently, no cultural resources are associated with the Combat Arms Facility. If the No Action Alternative were selected, current practices would continue and construction would not occur.

4.8.2 Alternative 2

There are no known archeological sites, historic buildings, or other culturally sensitive areas at the proposed site for Alternative 2. The closest Air Defense Command building is located approximately 700 feet from the Proposed Action location. Construction of Alternative 2 would not impact the Air Defense Command.

Prior to construction, a dig permit (60 AMW Form 55) would be acquired from 60 CES/CEV. All activities would comply with the Travis AFB Cultural Resource Management Plan (Travis AFB, 2003b). The Cultural Resource Manager would be contacted before the start of construction. If human remains or archaeological or cultural artifacts were discovered during construction, work would cease and the Cultural Resource Manager would be contacted. This alternative would have no significant impact on cultural resources.

4.8.3 Alternative 3

There are no known archeological sites, historic buildings, or other culturally sensitive areas associated with Alternative 3. Prior to construction, a dig permit (60 AMW Form 55) would be acquired from 60 CES/CEV. All activities would comply with the Travis AFB Cultural Resource Management Plan (Travis AFB, 2003b). The Cultural Resource Manager would be contacted before the start of construction. If human remains or archaeological or cultural artifacts were discovered during construction, work would cease and the Cultural Resource Manager would be contacted. This alternative would have no significant impact on cultural resources.

4.8.4 Alternative 4

The impacts and permit requirements for Alternative 4 would be the same as described above for Alternative 3. This alternative would have no significant impact on cultural resources.

4.9 Land Use

This section discusses the potential effects to land use from the Proposed Action and alternatives. If implementation of an alternative were considered incompatible with land use designations, the impact would be considered significant. Land use at Travis AFB is described in the Travis AFB General Plan (Travis AFB, 2002a). Travis AFB is in the process of updating and amending the general plan that was released in 2002. Some of the information presented in this section reflects anticipated changes to the general plan.

4.9.1 Alternative 1

Under the No Action Alternative, the construction of an SFA/CA Facility would not occur, and there would be no change to the existing land use.

4.9.2 Alternative 2

The parking lot portion of the Proposed Action is bordered on three sides by roadways that are adjacent to open space. Along the fourth side, directly north of the site, is open space (grass land), which is adjacent to residences. The SFA/CA Facility would be bordered by open fields on three sides; the northern section would be bordered by a road.

Alternative 2 involves constructing an SFA/CA Facility designated as “administrative land use.” According to Travis AFB General Plan land use maps, the existing land use designation for this site is open space and the future land use designation is administrative (Travis AFB, 2002a). Although the Proposed Action is not compatible with the current land use designation, it is compatible with the future designation.

A portion of the Alternative 2 site is located inside the boundary of LF006, for which an Interim Record of Decision was prepared in 1997 (Travis AFB, 1997). Details regarding consequences for construction on this site are discussed in Section 4.4.2.

The Proposed Action location is adjacent to LF007, which is under legal LUCs. Because the Proposed Action location is not on LF007, impacts to LF007 are not anticipated from construction.

4.9.3 Alternative 3

4.9.3.1 Land Use Designations

Alternative 3 proposes to construct an SFA/CA Facility adjacent to the existing range, which is designated as industrial under current designations and airfield clear area under future designations. Because an administrative facility would be constructed under this alternative, Alternative 3 would not be compatible with the existing or the future land use designations.

In addition, the Alternative 3 site is located in APZ I (Travis AFB, 2002a), which conditionally allows certain types of administrative and industrial uses. Air Force Instruction 32-7084 indicates the compatibility of various land uses. Facilities used for education, professional services, and government services are considered incompatible with an APZ I designation. The SFA/CA Facility would be constructed to provide space for educational services; therefore, construction of the facility at the Alternative 3 site would be considered an incompatible land use.

4.9.3.2 Land Use Controls

The Alternative 3 site is located inside the boundary of LF007, which is managed under LUCs (see Section 3.9.2). Restricted activities at LF007 include construction activities such as digging and excavation. The controls prevent activities at the site that would compromise the integrity or performance of the landfill cap or otherwise present a risk to human health or the environment (CH2M HILL, 2002). Construction of this alternative would comply with the LUCs, which require that any new, permanent construction at this site acquire concurrence from the following organizations:

- 60 CES/CEV, in form of a completed and signed excavation permit
- Remediation Program Manager, by review of this EA
- EPA and state regulators

Implementation of Alternative 3, in compliance with the LUCs and any conditions imposed on the project by the organizations whose concurrence is required, would result in less than significant impacts to land use.

4.9.4 Alternative 4

The proposed Alternative 4 would locate the proposed SFA/CA Facility near Building 1380, which is currently used by the Fire Department and is near the range. This proposed site is located across the road from the proposed Alternative 3.

The existing and future land use designations for this alternative site are Airfield Clear Area. Land use under Alternative 4 would be administrative. Administrative land use would not be considered compatible with either the current or future land uses.

Furthermore, the site is located in APZ I, and construction of the SFA/CA Facility at this site would be incompatible with the APZ I designation, as described under Alternative 3.

Alternative 4 would be located in the path of a proposed high-speed taxiway for Runway 03R/21L. This taxiway was sited in 1984 and has not developed into a viable project. If the Base were to choose to locate the SFA/CA Facility at the Alternative 4 site, the proposed taxiway site would have to be relocated or deleted because the SFA/CA Facility would be incompatible with the taxiway.

4.10 Transportation System

4.10.1 Alternative 1

The No Action Alternative assumes that the construction of the SFA/CA Facility would not occur. Security Forces and Combat Arms personnel would continue to drive to the building locations currently used. The transport of students and weapons between the classroom, weapon storage, and range facilities would continue.

4.10.2 Alternative 2

Alternative 2 proposes to construct the SFA/CA Facility near Building 373. The Proposed Action would not add vehicle traffic to Travis AFB. Building personnel and students would drive to a different location onbase than under the No Action Alternative. The proposed location is situated approximately 0.75 mile from the current location, between the current building location and the range; it would be approximately 0.25 mile from the range. Vehicle transportation of students to and from the range would be required, but for a shorter distance than under Alternative 1. Building employees would have to travel to a different building to reach their work location. Depending on the location of their residences, this could be a longer or shorter distance than they are currently driving. The impact from the changed travel route for building employees and students is negligible. No significant impact to the transportation systems would occur from this alternative.

The roadways impacted by the construction traffic, including travel by construction workers in their personal vehicles to the construction site, would be the main Base thoroughfares, Vandenberg Drive, and Collins Drive if it were used to gain site access. According to the Travis AFB General Plan, there are no significant transportation or parking issues associated with Vandenberg and Collins Drives. Consequently, traffic impacts resulting from the proposed construction would be negligible and, therefore, less than significant.

4.10.3 Alternative 3

Under Alternative 3, the SFA/CA Facility would be constructed at Building 1370 and the existing range. Building personnel and students would drive to a different location onbase than under the No Action Alternative. The proposed Alternative 4 location is immediately adjacent to the range. Students would walk from the classroom to the range. The closeness to the range would not change the total trip distances for students, because they currently drive from the classroom facility to the range, and under Alternative 3 the classroom is adjacent to the range. Personnel working at the building would drive a longer distance to get to work, because the alternative location is located approximately 1.25 miles east of the current location. The impacts to traffic flow and patterns resulting from implementation of Alternative 3 would be minimal; therefore, impacts would be less than significant.

Construction impacts to traffic would be the same as described for Alternative 2.

4.10.4 Alternative 4

Alternative 4 proposes to construct the SFA/CA Facility near Building 1380. This proposed location is directly south across the access road from the Alternative 3 location and the range. Therefore, potential impacts associated with transportation and parking to the area

would be the same as discussed for Alternative 3. Construction impacts to traffic would be the same as described for Alternative 2.

4.11 Airspace/Airfield Operations

4.11.1 Alternative 1

No change in airspace/airfield operations would result from the No Action Alternative.

4.11.2 Alternative 2

The SFA/CA Facility would be located outside airspace and airfield operational areas. Construction of the building would not result in impacts to airspace or airfield operations. The building would be constructed in an area that complies with Unified Facilities Criterion 3-260-01 standards for location, with respect to the runway centerline and apron clearance.

4.11.3 Alternative 3

Construction of the SFA/CA Facility under Alternative 3 would locate it in APZ I. Locating the SFA/CA Facility in APZ I would not require any changes in airfield operations. Therefore, there would be no effect on APZ I as a result of locating the proposed building within its boundaries.

4.11.4 Alternative 4

Impacts of Alternative 4 would be the same as those described for Alternative 3.

4.12 Safety and Occupation Health

4.12.1 Alternative 1

Implementing the No Action Alternative would not change health or safety conditions. Construction would not be required under this alternative, so impacts to safety and occupational health during construction would not occur. However, continuing current practices would also not provide the facilities needed for the following:

- An adequately secured armory. The current facility fails to meet security requirements for a 24-hour, manned facility for five personnel.
- Weapons maintenance and parts storage that meets the minimum standards required to safely clean weapons. These activities would continue to be conducted in the training classroom currently used.
- Uninterrupted access to the Security Forces warehouse. Because the location is in the explosive distance safety zone, activities would continue to be interrupted during hazardous cargo shipments.

Because the current conditions are not in compliance with Air Force requirements, the continuing current conditions are a substantial risk to safety. Current facility operations do

not affect public health because only military personnel are involved in Security Forces and Combat Arms operations.

4.12.2 Alternative 2

Implementation of Alternative 2 would require the construction of a new building, involving military and civilian personnel. The potential for adverse impacts to safety and occupational health are expected to be minor and limited to the duration of construction. Implementation of the Proposed Action would follow applicable rules and regulations regarding safety and occupational health. A health and safety plan for construction would be prepared that would include information requirements, such as shoring for excavations. Construction areas would be secured as necessary to prevent unauthorized personnel from entering the work sites or excavations.

In accordance with the Occupational Safety and Health Act, workers would be provided with personal protective equipment, including required traffic safety equipment. Personal protective equipment includes, but is not limited to, approved hard hats, safety shoes, gloves, goggles, eye/face protection, safety belts, harnesses, respirators, hearing protection, and traffic safety vests.

During operation, implementation of Alternative 2 would provide facilities for the following:

- An adequately secured armory
- Weapons maintenance and parts storage
- Uninterrupted access to the Security Forces warehouse

Because the current conditions are not in compliance with Air Force requirements, the impacts to safety resulting from implementation of this alternative would be considered a significant beneficial impact.

Only military personnel are involved in Security Forces and Combat Arms operations. Therefore, impacts to public health are not anticipated.

4.12.3 Alternative 3

The impacts under Alternative 3 would be the same as those described under Alternative 2. In addition, see Section 4.6.3 for noise impacts associated with this alternative, and Section 4.11.3 for impacts associated with the alternative project location in APZ I.

4.12.4 Alternative 4

The impacts would be the same as those described under Alternative 2. In addition, see Section 4.6.4 for noise impacts associated with this alternative, and Section 4.11.4 for impacts associated with the alternative project location in APZ I.

4.13 Environmental Management (Including Pollution Prevention, Geology, and Soils)

4.13.1 Alternative 1

There would be no change to pollution prevention, geology, or soils if the No Action Alternative were implemented.

4.13.2 Alternative 2

Implementation of the Proposed Action would comply with the overall objectives of the pollution prevention program at Travis AFB. Construction of the facility would produce only a minimal amount of waste in the form of construction debris, and measures to prevent pollution would be taken. Wastes generated during the construction phase of the project would be removed from the site and recycled. If recycling were not possible or feasible, the waste would be disposed of in accordance with applicable regulations and policies. Generation and management of waste during construction is expected to meet the pollution prevention goals set in the Travis AFB Pollution Prevention Management Action Plan.

Waste production during operation of the building would be approximately equal to the current levels. Increasing the number of students from 28 to 31 would slightly increase the waste generated during training for weapons maintenance. Improved facilities are expected to enhance the proper management and storage of all waste types.

Source reduction and waste recycling would be implemented to the extent practicable. Any scrap ferrous and nonferrous metals from the construction project would be recycled. After construction, recyclable administrative refuse, including cardboard, plastic bottles, cans, and mixed paper, would continue to be collected and delivered to the recycling center, as is currently done. Please see Section 4.4 for more information on waste and hazardous waste production and management. This alternative is not expected to result in impacts to pollution prevention management or waste production.

No important geological or soil resources are present in the project area. Construction of Alternative 2 would disturb surface soils and permanently alter the ground surface from a soil surface to a paved surface. Total disturbance would cover approximately 1 acre during construction, including access and staging areas; the area of permanently altered surface would encompass less than 1 acre. Therefore, the Proposed Action is also not expected to result in significant impacts to geology or soils.

4.13.3 Alternative 3

The impacts of Alternative 3 would be the same as those described for Alternative 2.

4.13.4 Alternative 4

The impacts of Alternative 4 would be the same as those described for Alternative 2.

4.14 Environmental Justice

4.14.1 Alternative 1

Implementation of the No Action Alternative would not affect minority or low-income populations, or children.

4.14.2 Alternative 2

No low-income or minority populations in the surrounding area would be affected by the construction of the Proposed Action. In addition, the Proposed Action would not cause adverse impacts with the potential to disproportionately affect such populations if they were present.

Construction sites can be attractive, and therefore dangerous, to children. However, this alternative site is not located near onbase or offbase family housing areas or schools. The nearest housing is located to the northwest of the site and is used as unaccompanied housing for individuals without families. The construction site, excavations, and materials would be properly secured during construction.

Emissions from facilities operations would be either exempt from permitting or comply with permit conditions. Hazardous wastes produced at the site would be handled and disposed of in accordance with applicable regulations and the Base Hazardous Waste Management Plan, and would therefore not pose a disproportionate risk to minority populations.

Implementation of the Proposed Action would not result in impacts to either minority populations or the health or safety of children.

4.14.3 Alternative 3

The impacts of Alternative 3 would be the same as those described under Alternative 2. No housing facilities are located near the Alternative 3 site.

4.14.4 Alternative 4

The impacts of Alternative 4 would be the same as those described under Alternative 3.

4.15 Indirect and Cumulative Impacts

Indirect impacts are defined by the CEQ in 40 CFR 1508.8 as those “which are caused by the action and are later in time or farther removed in distance, but are still reasonably foreseeable. Indirect effects may include growth-inducing effects and other effects related to induced changes in the pattern of land use, population density or growth rate, and related effects on air and water and other natural systems, including ecosystems.”

Indirect impacts of the four alternatives have been addressed in the preceding resource-specific analyses. Implementing the Proposed Action is not expected to result in significant indirect impacts to water quality or related biological resources. The Proposed Action would not result in significant growth-inducing effects, induced changes in population, or related effects. Potential indirect effects to land use were addressed in Section 3.9. The

Proposed Action would permit three additional students per class to partake in classroom training, which would not result in impacts to socioeconomic or traffic and associated air quality impacts.

Cumulative impacts are defined by the CEQ in 40 CFR 1508.7 as “impacts on the environment which result from the incremental impact of the action when added to other past, present, and reasonable foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes such other actions.”

Projects considered for cumulative impact in this EA are those that are ongoing or planned to begin within the next 3 years, at Travis AFB. Projects being considered beyond 3 years are too uncertain to be evaluated. The following actions, organized by start date, are the foreseeable future actions that could occur at Travis AFB (URS, 2004):

- **Fiscal Year 2005**

- Construct C-17 Roads and Utilities (40,000 ft² for roadways)
- Construct Fire/Crash Rescue Station (30,192 ft²)
- Construct Coast Guard Facility (103,000 ft²)
- Replace Transportation Squadron wash rack
- Replace three water reservoirs

- **Fiscal Year 2006**

- Construct Phase 1 of the Air Mobility Operations Group Center (92,000 ft²)
- Construct C-17 Maintenance Training Facility, AGE Facility, Nose Dock, Engine Storage Facility, Munitions Maintenance Facility (132,750 ft²)
- Construct In-flight Kitchen/Fleet Service Facility (23,000 ft²)
- Replace heating, ventilation, and air conditioning, Building 878
- Renovate West/Center Island, Building 810 (renovate West Island and Center Island upstairs and downstairs office/work space; upgrade/repair area fire suppression, HVAC, electrical, lighting, lower ceilings; replace doors, bathroom facility, and plumbing; paint as required; update phone and computer line service)
- Repair 600 Ramp, Spots 605 through 607
- Paint Shop Floor, Building P-41 (S/M)
- Repair flooring at Passenger Terminal, Building 3 (replace old and damaged flooring in the following areas of the passenger terminal with Marmoleum®: telephone communications/ security monitor room, dispatch office, vehicle control NCO's office, building custodian's office, worker's break room, and all hallways)
- Repair Aircraft Hangar floor, 809 (R/M) (clean, repair, and paint hangar floor with poly-based paint/nonskid floor coating, paint function lines as required)
- Install additional lighting, Building 977 (install additional lighting along west side fence line)

- Demolish the following facilities:
 - Building 235 (Audio Visual)
 - Building 238 (Reserve Forces Operational Training)
 - Building 242 (Squadron Operations)
 - Building 572 (Warehouse)
 - Building 690 (Thrift Shop)
 - Building 755 (Shop Aircraft General Purpose)
 - Building 828 (Security Forces, Control)
 - Building 943 (Security Forces, Operations)
- **Fiscal Year 2007**
 - Construct Phases 2 and 3 of the Air Mobility Operations Group Center (610,000 ft²)
 - Demolish Building 882 (Civil Engineering Maintenance Shop)
 - Renovate Hangar 808 (R/M)
 - Repair hangar floor, Building 808 (paint hangar floor with nonskid materials and finish with gloss coat)
 - Remove water filter system (remove water filter recycle system from floor system rerouted to the sanitary sewer system; may require an oil-water separator)
 - Construct C-17 two-bay hangar, addition/alteration to Composite Shop, Wheel and Tire Shop, Taxiway Repairs (719,730 ft²)
 - Construct Passenger Terminal (94,519 ft²)

Alternative 1 is the No Action Alternative and would have no potential for cumulative impacts. There are potential cumulative impacts to the resource areas discussed below from Alternatives 2, 3, or 4 in conjunction with the above actions. Cumulative impacts are primarily construction related.

The main cumulative impacts to air quality would result from multiple construction projects occurring simultaneously. The potential impacts to air quality from construction are discussed in Section 4.2. Not all of the actions listed would be constructed simultaneously. The Proposed Action would conform to the SIP and not be regionally significant. The Proposed Action, after construction is complete, would be a minor source of emissions, so it would only minimally contribute to any long-term cumulative impacts to air quality.

As discussed in Section 4.5, the Proposed Action could impact water quality during construction. The Proposed Action would add minimally to the total amount of impervious surface at the Base. Travis AFB currently has a basewide stormwater permit and a basewide Stormwater Pollution Prevention Plan. Non-point-source stormwater discharge at the Base is regulated under the Travis AFB Industrial Activities Storm Water Discharge Permit. Cumulative impacts from multiple actions would be addressed by the basewide permits and programs that are currently in place.

As noted in Section 3.5, both the stormwater drainage system and the sanitary sewer system are inadequate for current Base needs. Future actions would put additional strains on both systems. The Base has conducted studies to define system deficiencies and is developing

remedial measures. The design of future sewer and stormwater upgrades should take into account the cumulative impacts resulting from the planned actions, to ensure adequate future system capacity and minimize the potential for flooding. No significant indirect or cumulative impacts are anticipated from any of the alternatives.

4.16 Unavoidable Adverse Impacts

As detailed in the preceding resource-specific analyses, no significant unavoidable adverse impacts are expected from the construction or operation of the SFA/CA Facility under the Proposed Action Alternative. Adverse impacts resulting from construction of the SFA/CA Facility are anticipated to be minor and short in duration, and would not result in significant adverse impacts to environmental or socioeconomic resources.

The Alternative 3 and 4 sites are located in APZ I, and Air Force policy does not permit construction of administrative buildings in the APZs. Furthermore, both alternatives would be located in areas with incompatible land use designations. No other impacts potentially resulting from implementation of these alternatives would be significant.

4.17 Relationship between Short-term Uses and Enhancement of Long-term Productivity

The purpose of the Proposed Action is to construct an SFA/CA Facility that is adequate to meet the needs of Base operations. To be considered adequate, the SFA/CA Facility should be as follows:

- Centralized
- Environmentally safe for arms training, operations, maintenance, and storage
- Located near the existing range

The training and administrative functions for the SFA/CA Facility are currently housed in antiquated buildings that are not adequate for Base needs and detract from Base operations. Long-term productivity would be enhanced by implementing Alternative 2, 3, or 4, because the deficiencies in the current facility, as listed in Section 1.2, would be remedied.

4.18 Irreversible and Irretrievable Commitment of Resources

No significant adverse impacts would result from the commitment of resources under the Proposed Action.

Resources expected to be affected during the long-term use of the building include additional electricity and the fuel for heating. The current main electrical system is anticipated to have sufficient capacity to accommodate the expected increases in load. The following electrical loads are expected for each of the new spaces and their corresponding systems:

- Lighting – 45,000 watts
- Power – 63,000 watts
- Heating, Ventilating, and Air Conditioning – 180,000 watts

Common Outdoor Sound Levels

Common Indoor Sound Levels

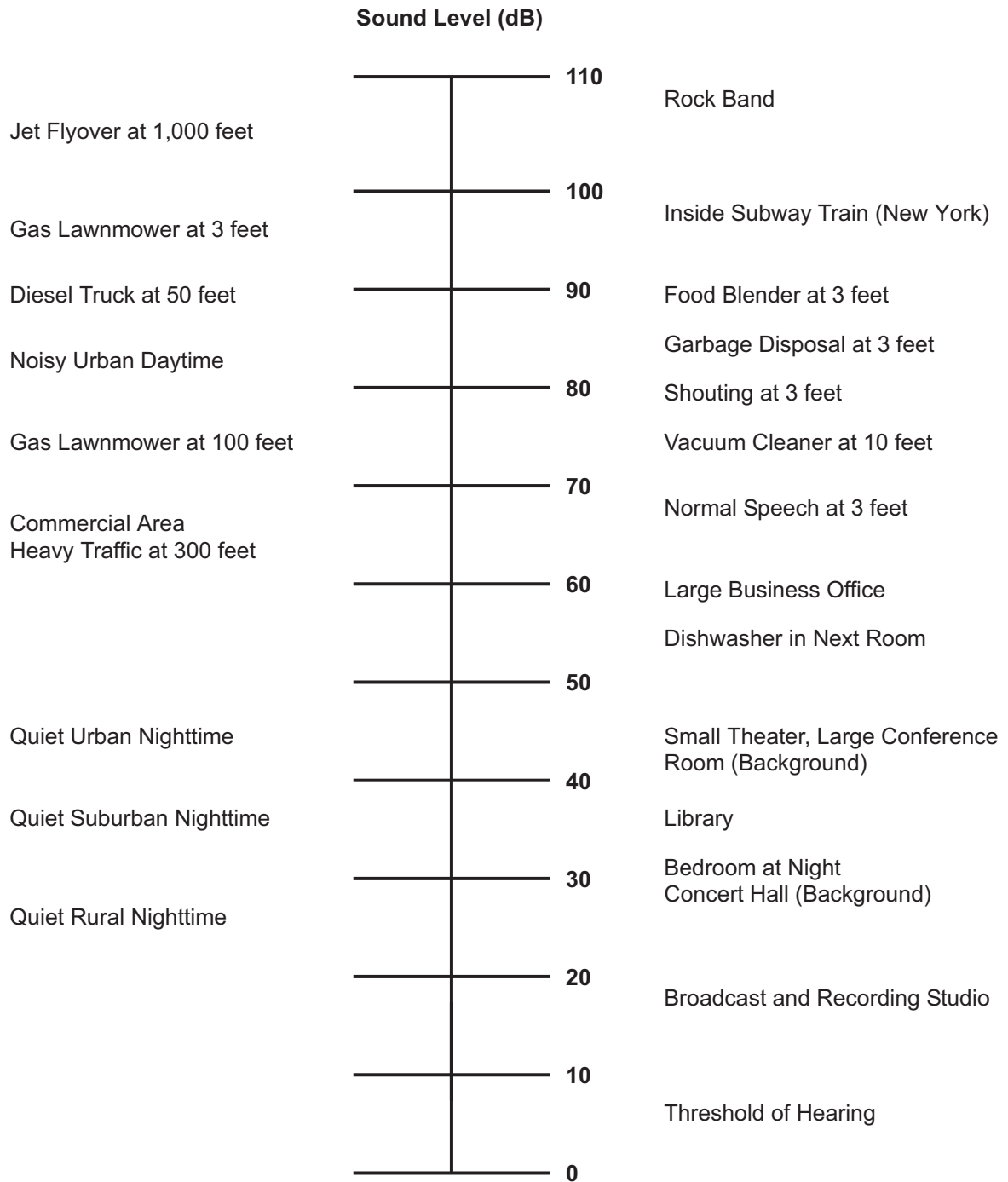


FIGURE 4-1
COMPARATIVE SOUND LEVELS
 ENVIRONMENTAL ASSESSMENT FOR A
 SECURITY FORCES ARMORY/COMBAT ARMS FACILITY
 TRAVIS AIR FORCE BASE, CALIFORNIA

SECTION 5.0

List of Preparers

Name	Education	Experience	Role
Kim Basial	B.A., English, Linguistics, and Speech	1 year	Technical Editor
Tony Jaegel	B.S., Environmental Resources Engineering	12 years	Project Manager
Karin Lilienbecker	M.S., Biology	11 years	Task Manager, Environmental Planner
Ed McCarthy	B.S., Toxicology	5 years	Environmental Scientist
Christine Roberts	M.C.P., Architecture and Urban Planning	14 years	Senior Reviewer
Mike Urkov	M.A., Water Resources Administration	11 years	Regional Senior Review

SECTION 6.0

List of Agencies and Persons Consulted and/or Provided Copies

The following people were consulted during preparation of this EA:

- Captain Jeremiah Frost, CES/CEV
- Rodolfo Pontemayor, CES/CEV
- Wayne Williams, CES/CEP

Travis AFB will coordinate distribution of this EA to the following public and regulatory agencies:

- Federal Agencies
 - U.S. Environmental Protection Agency, Region 9
Director, Office of Federal Activities
75 Hawthorne Street
San Francisco, California 94105
 - U.S. Department of the Interior
U.S. Fish and Wildlife Service
CA/NV Operations Office
2800 Cottage Way, Room W-2606
Sacramento, California 95825
- State Agencies
 - State of California Clearinghouse
Governors Office
1400 Tenth Street, Room 121
Sacramento, California 95814

The public was offered a 15-day period to comment on this EA. A public notice was published in *The Vacaville Reporter* on February 27 and March 1, 2005, and the EA was available for public review at the Fairfield-Suisun Community Library, the Vacaville Public Library, and the Travis AFB library. A copy of the proof of publication is included in Appendix E.

SECTION 7.0

Works Cited

Barnes, J.D., L.N. Miller, and E.W. Wood. 1977. *Power Plant Construction Noise Guide*. Empire State Electric Energy Research Corporation.

Bay Area Air Quality Management District (BAAQMD). 2001. *San Francisco Bay Area Ozone Attainment Plan for the 1-hour National Ozone Standard*. October.

Bay Area Air Quality Management District (BAAQMD). 1999. *BAAQMD CEQA Guidelines: Assessing the Air Quality Impacts of Projects and Plans*. December.

California Air Resources Board (CARB). 2004. *California Ambient Air Quality Data 1980-2002*. January.

California Air Resources Board (CARB). 2001. *The 2001 California Almanac of Emission and Air Quality*.

California Air Resources Board (CARB). 1998. *Final Carbon Monoxide Redesignation Request and Maintenance Plan for Ten Federal Planning Areas*. September.

California Department of Fish and Game (CDFG). 2004. *State and Federally Listed Endangered and Threatened Animals of California*. August.

California Native Plant Society. 2001. *California Native Plant Society Inventory*.
<http://www.northcoast.com/~cnps/cgi-bin/cnps/sensinv.cgi>.

CH2M HILL. 2003. *Groundwater Sampling and Analysis Program, 2002-2003 Annual Report*. November.

CH2M HILL. 2002. *LF007 Soil Remedial Action, Design Report and Post-construction Maintenance Plan*. Final. August.

CH2M HILL. 2001. *Soil Record of Decision for the WABOU*. Draft Final. December.

CH2M HILL. 2000. *Stormwater Drainage System Improvements Plan, Volume 1*. September.

CH2M HILL. 1999. *LF006 Natural Attenuation Assessment Work Plan, North, East, and West Industrial Operable Unit*. Final. March.

Dermatas, D., N. Menounou, P. Dutko, M. Dadachov, P. Arienti, and V. Tsaneva. 2003. *Lead and Copper Contamination in Small Arms Firing Ranges*. Proceedings of the 8th International Conference on Environmental Science and Technology. Lemnos Island, Greece, September 8-10, 2003.

Federal Interagency Committee on Urban Noise. 1980. *Guidelines for Considering Noise in Land Use Planning and Control*.

Miller, L.N., E.W. Wood, R.M. Hoover, A.R. Thompson, S.L. Thompson, and S.L. Paterson. 1978. *Electric Power Plant Environmental Noise Guide, Vol. 1*. Prepared by Bolt, Beranek & Newman, Inc., for the Edison Electric Institute.

Olmsted, F.H., and G.H. Davis. 1961. *Geologic Features and Ground-Water Storage Capacity of the Sacramento Valley, California*. Geological Survey Water-Supply Paper 1497.

President's Council on Environmental Quality (CEQ). 1997.

<http://ceq.eh.doe.gov/nepa/regs/guidance.html>.

Radian. 1996a. *Final Groundwater Sampling and Analysis Program*. July.

Radian. 1996b. *Feasibility Study, North/East/West Industrial Operable Unit, Travis Air Force Base, Final*. September.

South Coast Air Quality Management District. 1993. *CEQA Air Quality Handbook*. April.

Thomasson, H.G., Jr., F.H. Olmsted, and E.F. LeRoux. 1960. *Geology, Water Resources and Usable Ground-Water Storage Capacity of Part of Solano County, California*. Geological Survey Water-Supply Paper 1464.

Travis Air Force Base (AFB or Base). 2003a. *Integrated Natural Resources Management Plan*. September.

Travis Air Force Base (AFB or Base). 2003b. *Integrated Cultural Resources Management Plan*. March.

Travis Air Force Base (AFB or Base). 2003c. *Fiscal Year 2003 Economic Impact*.

Travis Air Force Base (AFB or Base). 2002a. *Travis Air Force Base General Plan*. October.

Travis Air Force Base (AFB or Base). 2002b. *Travis Air Force Base Environmental Flight Policy for Contractors*. August.

Travis Air Force Base (AFB or Base). 1999. *Hazardous Waste Management Plan*. December.

URS. 2004. *Environmental Assessment for the Construction of the Army Recruiting Battalion Center, Travis Air Force Base, California*. January

U.S. Air Force (Air Force). 1998. *USAF Management Action Plan – Travis Air Force Base – Fairfield, California*. Department of the Air Force, 60th Air Mobility Wing.

U.S. Air Force (Air Force). 1997. Air Force Instruction 32-7086, Hazardous Materials Management. August.

U.S. Air Force (Air Force). 1994. Air Force Instruction 32-7042, Solid and Hazardous Waste Compliance. May.

U.S. Environmental Protection Agency (EPA). 1998. *Supplement D to Compilation of Air Pollution Emission Factors, Volume 1: Stationary Point and Area Sources*. August.

U.S. Census Bureau. 2000. *American Factfinder*. Solano County.

<http://factfinder.census.gov/servlet/SAFFacts?sse=on>

U.S. Census Bureau. 2004. *Current Population Survey 2004 Annual Social and Economic Supplement*.

U.S. Environmental Protection Agency (EPA). 1971. *Noise from Construction Equipment and Operations, US Building Equipment, and Home Appliances*. Prepared by Bolt, Beranek & Newman, Inc., for Office of Noise Abatement and Control.

Appendix A
Air Force Form 813

REQUEST FOR ENVIRONMENTAL IMPACT ANALYSIS

Report Control Symbol
RCS: 04-37

INSTRUCTIONS: Section I to be completed by Proponent; Sections II and III to be completed by Environmental Planning Function. Continue on separate sheets as necessary. Reference appropriate item number(s).

SECTION I - PROPONENT INFORMATION


1. TO (Environmental Planning Function) 60 CES/CEVP	2. FROM (Proponent organization and functional address symbol) 60 CES/CECC	2a. TELEPHONE NO. 424-0882
3. TITLE OF PROPOSED ACTION COMBAT ARMS CAMPUS <i>XDAT: 05-3001</i>		
4. PURPOSE AND NEED FOR ACTION (Identify decision to be made and need date) TO ASSURE THAT ALL ENVIRONMENTAL REQUIREMENTS ARE PROPERLY IDENTIFIED AND ADDRESSED PRIOR TO CONSTRUCTION.		
5. DESCRIPTION OF PROPOSED ACTION AND ALTERNATIVES (DOPAA) (Provide sufficient details for evaluation of the total action.) CONSTRUCT A ONE STORY SECURITY FORCES ARMORY/COMBAT ARMS FACILITY (CURRENT MISSION). THE BUILDING SHALL MEET AT/FP STANDARDS.		
6. PROPONENT APPROVAL (Name and Grade)	6a. SIGNATURE	6b. DATE 1 Mar 04

SECTION II - PRELIMINARY ENVIRONMENTAL SURVEY. (Check appropriate box and describe potential environmental effects including cumulative effects.) (+ = positive effect; 0 = no effect; - = adverse effect; U = unknown effect)

	+	0	-	U
7. AIR INSTALLATION COMPATIBLE USE ZONE/LAND USE (Noise, accident potential, encroachment, etc.)				
8. AIR QUALITY (Emissions, attainment status, state implementation plan, etc.)				
9. WATER RESOURCES (Quality, quantity, source, etc.)				
10. SAFETY AND OCCUPATIONAL HEALTH (Asbestos/radiation/chemical exposure, explosives safety quantity-distance, etc.)				
11. HAZARDOUS MATERIALS/WASTE (Use/storage/generation, solid waste, etc.)				
12. BIOLOGICAL RESOURCES (Wetlands/floodplains, flora, fauna, etc.)				
13. CULTURAL RESOURCES (Native American burial sites, archaeological, historical, etc.)				
14. GEOLOGY AND SOILS (Topography, minerals, geothermal, Installation Restoration Program, seismicity, etc.)				
15. SOCIOECONOMIC (Employment/population projections, school and local fiscal impacts, etc.)				
16. OTHER (Potential impacts not addressed above.) <i>JA</i>				

An Environmental Assessment
is required,
do not award
without an approved
FONSI or ROD.

SECTION III - ENVIRONMENTAL ANALYSIS DETERMINATION

17.	<input type="checkbox"/> PROPOSED ACTION QUALIFIES FOR CATEGORICAL EXCLUSION (CATEX) # _____; OR <input checked="" type="checkbox"/> PROPOSED ACTION DOES NOT QUALIFY FOR A CATEX; FURTHER ENVIRONMENTAL ANALYSIS IS REQUIRED.	
18. REMARKS AN ENVIRONMENTAL ASSESSMENT IS NEEDED TO DETERMINE ENVIRONMENTAL IMPACTS OF CONSTRUCTION AT THE PROPOSED SITE. <i>PROPOSED SITE CONTAINS CONTAMINATED SOIL ALTERNATE SITE CONTAINS A HEALTH FIELD FOR ADJACENT BLDG 1380.</i>		
19. ENVIRONMENTAL PLANNING FUNCTION CERTIFICATION (Name and Grade) TROY MARTINSON, P.E. Chief, Environmental Flight	19a. SIGNATURE 	19b. DATE <i>3/2/04</i>

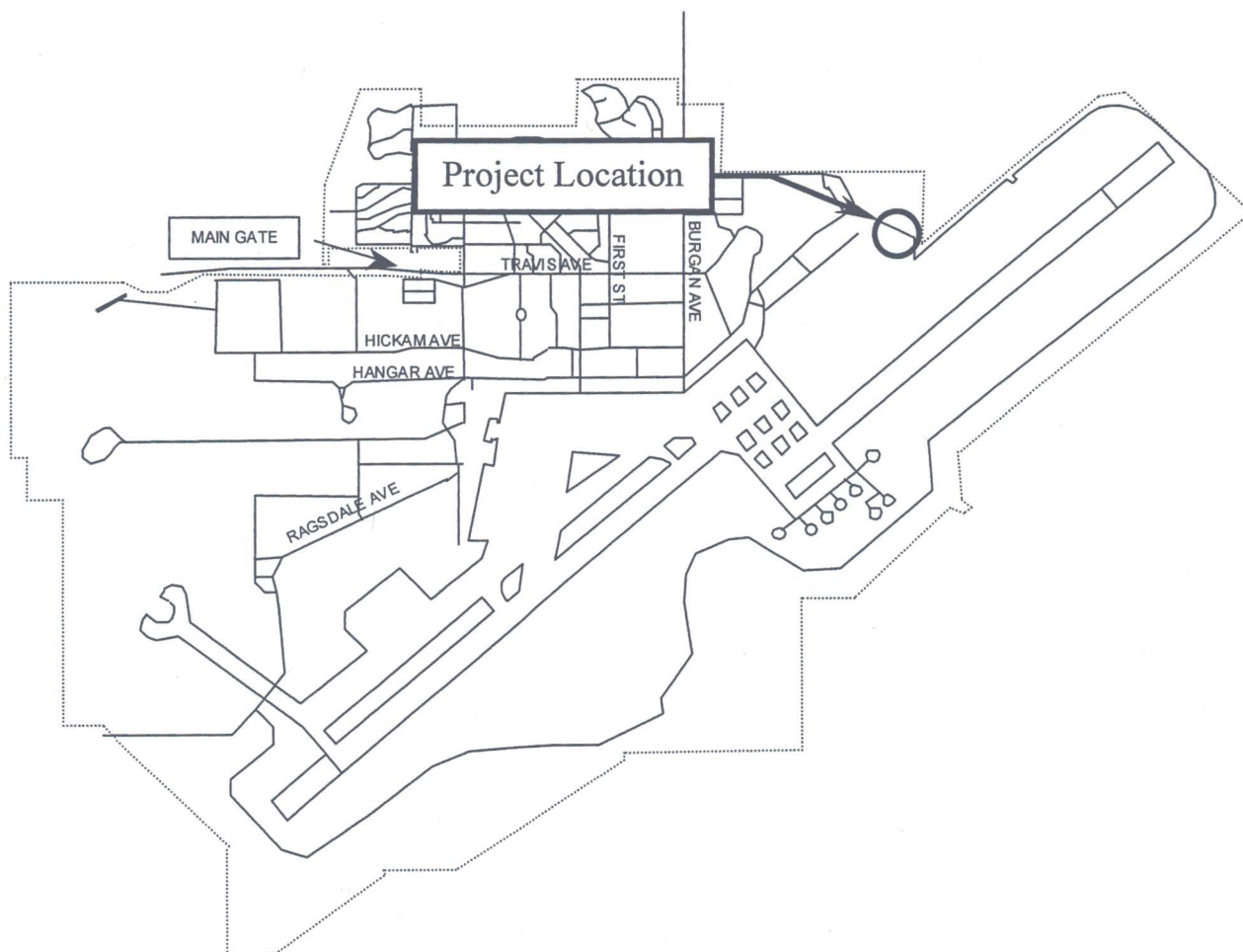
Appendix B
Air Force Form 1391

1. COMPONENT AIR FORCE	FY 2006 MILITARY CONSTRUCTION PROJECT DATA (computer generated)			2. DATE
3. INSTALLATION AND LOCATION TRAVIS AIR FORCE BASE, CALIFORNIA		4. PROJECT TITLE SECURITY FORCES ARMORY/COMBAT ARMS CAMPUS		
5. PROGRAM ELEMENT 28047	6. CATEGORY CODE 171-476	7. PROJECT NUMBER XDAT053001	8. PROJECT COST (\$000) 3,650	
9. COST ESTIMATES				
ITEM	U/M	QUANTITY	UNIT	COST
PRIMARY FACILITY				2,505
ARMORY/CAMPUS	SM	1,684	1,428	(2,404)
AT/FY PHYSICAL SECURITY MEASURES	SM	1,684	60	(101)
SUPPORTING FACILITIES				794
UTILITIES	LS			(75)
PAVEMENTS	LS			(190)
SITE IMPROVEMENTS	LS			(220)
COMMUNICATIONS	LS			(264)
DEMOLITION	SM	980	46	(45)
SUBTOTAL				3,299
CONTINGENCY (5.0 %)				165
TOTAL CONTRACT COST				3,464
SUPERVISION, INSPECTION AND OVERHEAD (6.0 %)				208
TOTAL REQUEST				3,672
TOTAL REQUEST (ROUNDED)				3,650
10. Description of Proposed Construction: Construct Combat Arms Training/Maintenance (CATM) building and mobility warehouse including reinforced concrete footings, concrete masonry unit walls, exterior insulated finish system, free standing seam metal roof, metal doors and frames, aluminum windows, concrete hardener floor finishes, solid core doors, fire and intrusion alarm systems, seismic and all other necessary work. AT/FP physical security IAW DoD minimum construction standards. Air Conditioning: 480 Tons				
11. REQUIREMENT: 1,684 SM ADEQUATE: 0 SM SUBSTANDARD: 980 SM <u>PROJECT:</u> Construct a CATM building and mobility warehouse (Current Mission). <u>REQUIREMENT:</u> Adequate facilities designed to support weapons training, cleaning, and storage. Facility to be used in conjunction with a small arms firing range system. Functional space area includes classroom area, administrative offices, supply/tool storage, weapons maintenance areas, weapons/ammo storage, and target/miscellaneous storage. A security forces mobility/contingency warehouse to house bulk and bin storage of materials needed to support base operations. Force protection measures will be incorporated IAW USAF Installation Force Protection Guide. <u>CURRENT SITUATION:</u> Security Forces Armory, CATM building and mobility storage are located in geographically separated, antiquated buildings. The Armory presently fails to meet security requirements as outlined in AFI 31-101, requiring the facility to be manned by 5 personnel, 24 hours a day. The CATM facility does not meet minimum requirements of AFM 36-2227. Classroom size is inadequate to meet range capacity, currently allowing only 28 out of the possible 31 students to train per class. Presently there is no designated room specifically designed for weapons maintenance and				

1. COMPONENT AIR FORCE	FY 2006 MILITARY CONSTRUCTION PROJECT DATA (computer generated)		2. DATE
3. INSTALLATION AND LOCATION TRAVIS AIR FORCE BASE, CALIFORNIA		4. PROJECT TITLE SECURITY FORCES ARMORY/COMBAT ARMS CAMPUS	
5. PROGRAM ELEMENT 28047	6. CATEGORY CODE 171-476	7. PROJECT NUMBER XDAT053001	8. PROJECT COST (\$000) 3,650
<p>parts storage required to perform modifications, upgrades, and repairs to installation weapons. Weapons are cleaned in a training classroom, which is not designed to meet the minimum standards required to clean weapons and dispose of bioenvironmental waste from the cleaning process. CATM requires 1.5 hours additional class time per session to transport weapons to class and to transport students and weapons to and from the firing range. The SF mobility warehouse is located in several buildings inside the explosive distance safety zone. HAZCARGO shipments force frequent closures of the facilities.</p> <p>IMPACT IF NOT PROVIDED: Daily operations will continue to be hindered, and costly work-arounds will continue. The entire security forces mission will be jeopardized; causing morale problems and ultimately affecting Security Forces mission accomplishment.</p> <p><u>ADDITIONAL:</u> Metric/English Conversion: 1SM=10.76SF. This project meets the criteria/scope specified in AFH 32-1084, "Civil Engineering Facility Requirements." A preliminary economic analysis of reasonable options for accomplishing this project (status quo, renovation, upgrade/removal, new construction, leasing) was accomplished. It indicates that new construction is the only option that will meet operational requirements. BCE: Lt Col Patrick J. Smith (707) 424-2492</p> <p><u>JOINT USE CERTIFICATION:</u> This facility can be used by other components on an "as available" basis; however, the scope of the project is based on Air Force requirements.</p>			

1. COMPONENT AIR FORCE	FY 2006 MILITARY CONSTRUCTION PROJECT DATA (computer generated)		2. DATE
3. INSTALLATION AND LOCATION TRAVIS AIR FORCE BASE, CALIFORNIA		4. PROJECT TITLE SECURITY FORCES ARMORY/COMBAT ARMS CAMPUS	
5. PROGRAM ELEMENT 28047	6. CATEGORY CODE 171-476	7. PROJECT NUMBER XDAT053001	8. PROJECT COST (\$000) 3,650
12. SUPPLEMENTAL DATA:			
a. Estimated Design Data:			
(1) Status:			
(a) Date Design Started			01-DEC-05
(b) Parametric Cost Estimates used to develop costs			YES
* (c) Percent Complete as of 01 JAN 2005			
* (d) Date 35% Designed			01-FEB-06
(e) Date Design Complete			01-JUN-06
(f) Energy Study/Life-Cycle analysis was/will be performed			NO
(2) Basis:			
(a) Standard or Definitive Design -			NO
(b) Where Design Was Most Recently Used -			
(3) Total Cost (c) = (a) + (b) or (d) + (e):			(\$000)
(a) Production of Plans and Specifications			0
(b) All Other Design Costs			0
(c) Total			0
(d) Contract			0
(e) In-house			0
(4) Construction Contract Award			06 OCT
(5) Construction Start			06 NOV
(6) Construction Completion			07 NOV
* Indicates completion of Project Definition with Parametric Cost Estimate which is comparable to traditional 35% design to ensure valid scope, cost and executability.			
b. Equipment associated with this project provided from other appropriations: N/A			

1. COMPONENT		
AIR FORCE		
3. INSTALLATION AND LOCATION		
TRAVIS AIR FORCE BASE, CALIFORNIA		
4. PROJECT TITLE		5. PROJECT NUMBER
Security Forces Armory/Combat Arms Campus		XDAT 05-3001

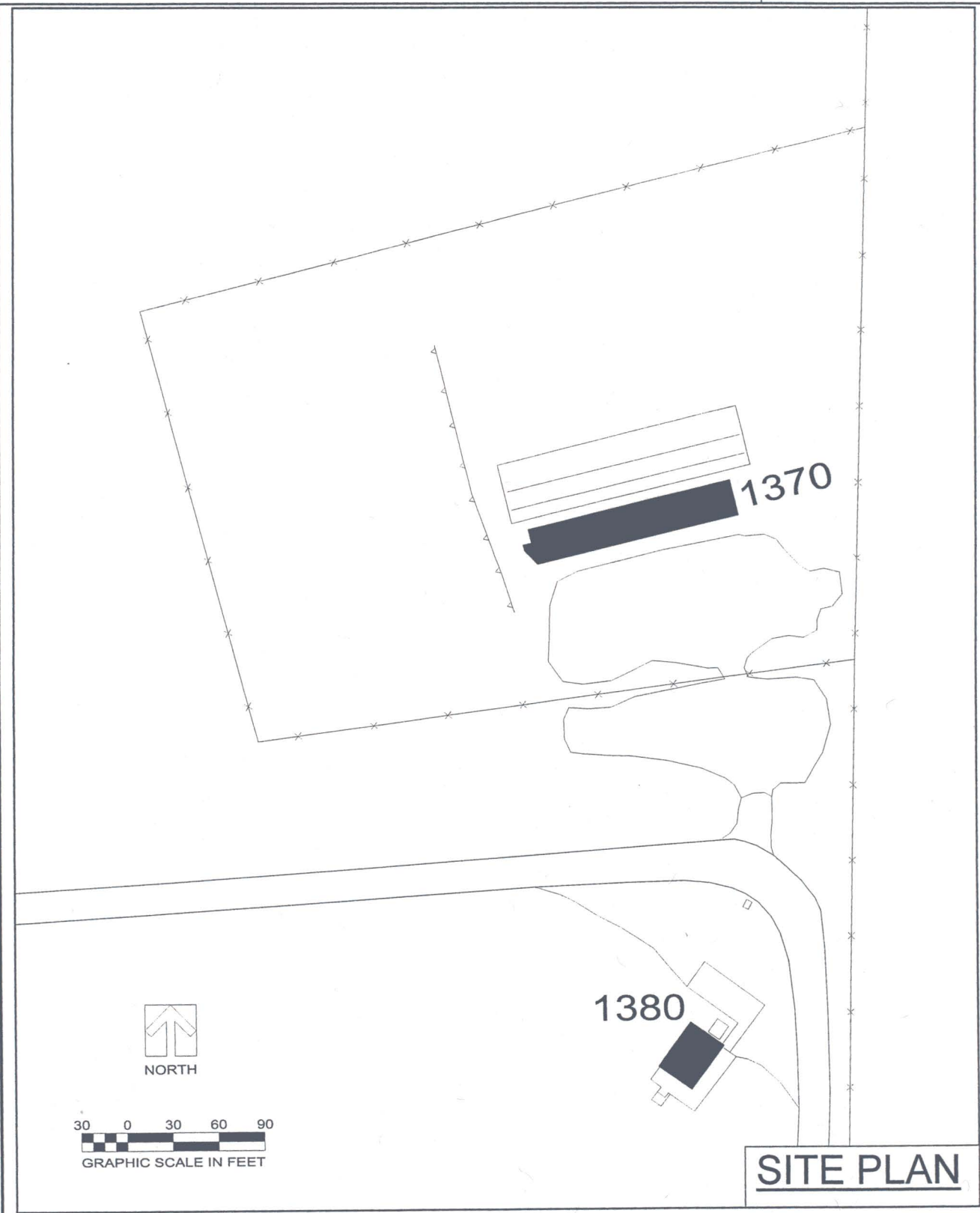


LOCATION MAP
NOT TO SCALE



FOR OFFICIAL USE ONLY

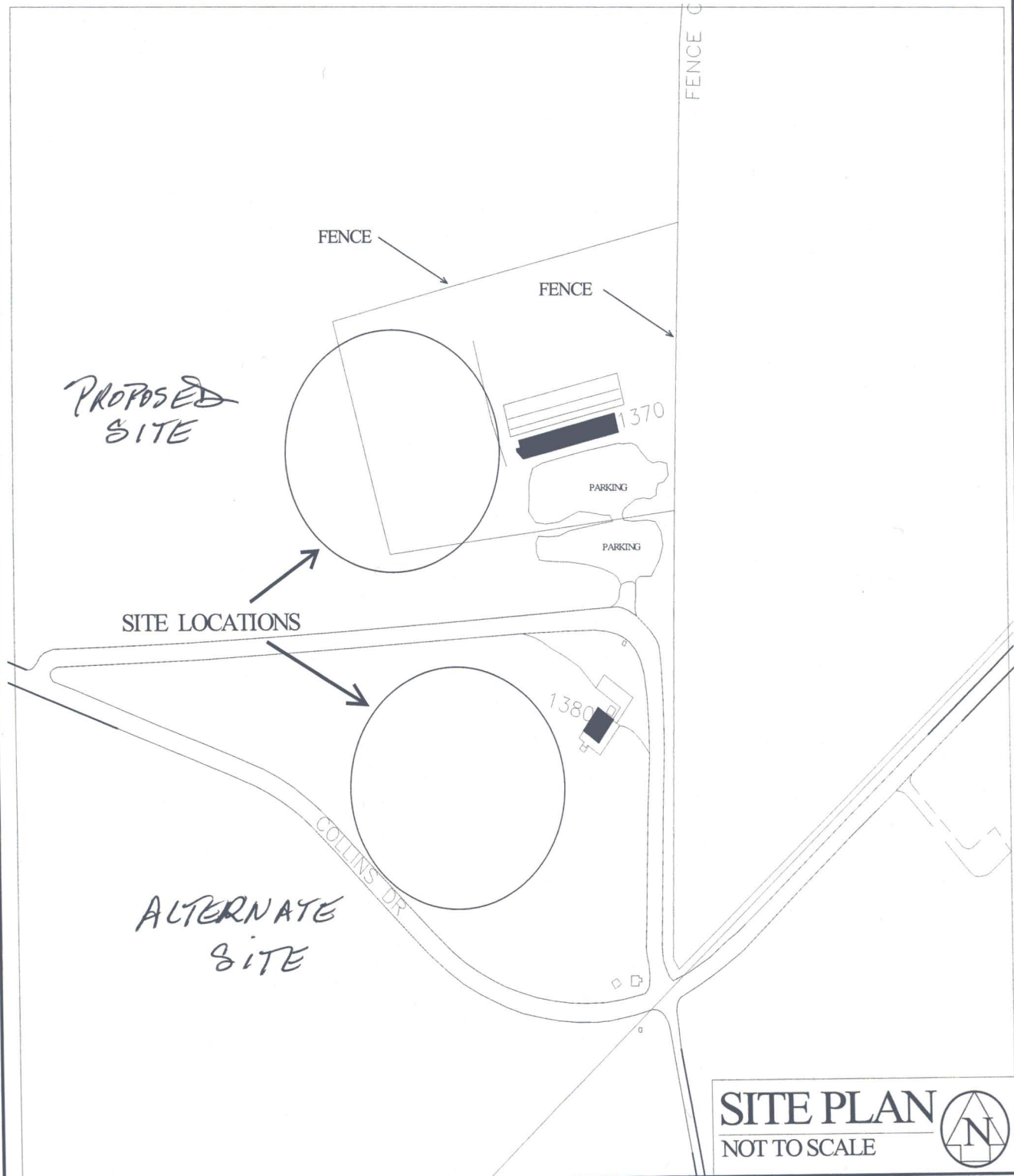
1. COMPONENT AIR FORCE	FY 2005 MILITARY CONSTRUCTION PROJECT DATA	2. DATE
3. INSTALLATION AND LOCATION TRAVIS AIR FORCE BASE, CALIFORNIA		
4. PROJECT TITLE Security Forces Armory/Combat Arms Campus		5. PROJECT NUMBER XDAT 05-3001



SITE PLAN

FOR OFFICIAL USE ONLY

1. COMPONENT AIR FORCE	2006 MILITARY CONSTRUCTION DATA	2. DATE
3. INSTALLATION AND LOCATION TRAVIS AIR FORCE BASE, CALIFORNIA		
4. PROJECT TITLE SECURITY FORCES ARMORY/COMBAT ARMS CAMPUS		5. PROJECT NUMBER XDAT 05-3001



1995

FOR OFFICIAL USE ONLY



PROJECT CONSTRAINTS Combat Arms Complex

-  Accident Potential Zones
-  Explosive Safety Q-D Arcs
-  Grazing Management Areas
-  IRP Sites
-  Lasthenia (Endangered Plant)
-  Planned Development (Sittings)
-  Preservation Areas (legal agreements)
-  Surface Waters
-  TAFB Boundary
-  Wetlands (with buffers)
-  Approach/Departure Surface 03L
-  Primary Surface 03L

Note: locations encumbered by these constraints may still be developed as long as the constraint conditions are addressed as part of the development effort. (e.g. obtain waivers for building within Q-D arcs, etc.)



1 inch equals 1,000 feet

Appendix C

Air Emission Calculations

Air Emission Calculations

C.1 Construction and Operation Emissions Summary

Table C-1 provides a summary of the construction and operation emissions associated with the Proposed Action. The detailed emission calculation methodologies are described in the following sections.

TABLE C-1

Summary of Emissions from Proposed Security Forces Armory/Combat Arms Facility
Environmental Assessment for a Security Forces Armory/Combat Arms Facility, Travis Air Force Base, California – Air Emission Calculations

Emission Type	Unit	VOC	NO _x	CO	PM ₁₀
Construction	tpy	0.7	9.6	2.1	0.7
Operation					
Cleaners	tpy	0.01	NA	NA	NA
Heating System	tpy	0.02	0.4	0.4	0.03
Operation Subtotal	tpy	0.03	0.4	0.4	0.03

Notes:

tpy = tons per year

NA = not applicable

C.2 Estimation of Construction Emissions

Table C-2 shows the emission factors and the total emissions from the construction of the Proposed Action. The construction emission factors of volatile organic compounds (VOCs), nitrogen oxides (NO_x), carbon monoxide (CO), and particulate matter less than 10 microns (PM₁₀) were obtained from Table 9-1 of the CEQA Air Quality Handbook (South Coast Air Quality Management District, 1993). These emission factors were established based on regional averages, including onsite construction equipment and workers' travel. The emission factors for "Industrial" facilities were used in the calculations.

Total emissions were calculated by multiplying the emission factors by the total square footage of the proposed construction.

TABLE C-2

Construction Emission Calculations
Environmental Assessment for a Security Forces Armory/Combat Arms Facility, Travis Air Force Base, California – Air Emission Calculations

	Unit	VOC	NO _x	CO	PM ₁₀
Emission Factor	lb/construction period – 1,000 ft ²	32.79	481.88	104.79	34.22
Construction Emissions	Lb/construction period	1,309	19,230	4,182	1,366
	tpy	0.7	9.6	2.1	0.7

Notes:

Construction emission factors were obtained from Table 9-1: Screening Table for Estimating Total Construction Emissions, South Coast Air Quality Management District CEQA Handbook (1993).

Square footage of building construction: 18,126

Square footage of parking lot: 21,780

Construction period: Jan. 2006 through Dec. 2006

C.3 Estimation of Operation Emissions

C.3.1 Emissions from Operation of the New Parts Cleaners

Table C-3 shows the estimated VOC emissions from operation of the two new parts cleaners. It was assumed that the annual average VOC emissions from the new parts cleaners would be the same as for the existing ones. The annual average VOC emissions of the new parts cleaner were calculated by dividing the total VOC emissions of the existing cleaners by the total number of the existing cleaners, then multiplying by two.

TABLE C-3

Parts Cleaner Emissions Calculations

Environmental Assessment for a Security Forces Armory/Combat Arms Facility, Travis Air Force Base, California – Air Emission Calculations

	Unit	VOC	NO _x	CO	PM ₁₀
Existing Cleaner Emissions	lb/yr	105	NA	NA	NA
Number of Existing Cleaners	-	10	NA	NA	NA
Average Emissions per Cleaner	lb/cleaner - yr	10.5	NA	NA	NA
Number of New Cleaners	-	2	NA	NA	NA
Total Emissions from New Cleaners	lb/yr	21	NA	NA	NA
	tpy	0.01	NA	NA	NA

Note: Existing parts cleaner emission data were provided by Travis Air Force Base.

C.3.2 Emissions from the New Boiler Operation

Table C-4 shows the emission factors and the total emissions of NO_x, VOC, CO, and PM₁₀ from operation of the new natural gas boiler. The emission factors of NO_x and CO were obtained from Tables 1.4-1 of Chapter 1 in *Supplement D of Compilation of Air Pollutant Emission Factors, Volume I: Stationary Point and Area Sources*, (U.S. Environmental Protection Agency, 1998). The emission factors of uncontrolled emissions from small boilers of less than 100 million British thermal units per hour (MMBtu/hr) were used in the calculation. The emission factors of VOCs and PM₁₀ were obtained from Table 1.4-2 of Supplement D, assuming all the particulate matter emissions would be PM₁₀. These emission factors were measured in pounds per million standard cubic feet (lb/MMSCF) in Supplement D, but were converted to lb/MMBtu in the calculation using the heating value of natural gas (1050 MMBtu/MMSCF).

The annual emissions from the new boiler were calculated by multiplying the emission factors (pounds per MMBtu [lb/MMBtu]) by the total operating hours per year and the heating rate of the boiler (MMBtu/hr).

TABLE C-4

Boiler Emissions Calculations

Environmental Assessment for a Security Forces Armory/Combat Arms Facility, Travis Air Force Base, California – Air Emission Calculations

	Unit	VOC	NO _x	CO	PM ₁₀
Emission Factors	lb/MMSCF	5.5	100	84	7.6
	lb/MMBtu	0.005	0.10	0.08	0.01
Total Emissions from the New Boiler	lb/yr	45.9	834.3	700.8	63.4
	tpy	0.023	0.42	0.35	0.03

Notes:

Emission factors for the boiler were obtained from Chapter 1, Tables 1.4-1 and 1.4-2, *Supplement D of Compilation of Air Pollutant Emission Factors, Volume I: Stationary Point and Area Sources* (EPA 1998).

Heating rate of the new boiler (MMBtu/hr): 0.2

Heating value of natural gas (MMBtu/MMSCF): 1,050

Operating hours (hr/yr): 8,760

Appendix D
Clean Air Act Conformity Applicability Analysis
for Travis Air Force Base
Security Forces Armory/Combat Arms Facility

Clean Air Act Conformity Applicability Analysis for Travis Air Force Base Security Forces Armory/Combat Arms Facility

D.1 Purpose

The U. S. Air Force is required to perform an air conformity applicability analysis to determine whether the construction and operation of the Security Forces Armory/Combat Arms (SFA/CA) Facility at Travis Air Force Base (AFB), California, will comply with the U.S. Environmental Protection Agency's (EPA) Final Conformity Rule, 40 Code of Federal Regulations (CFR) 93, Subpart B (for federal agencies), and 40 CFR 51, Subpart W (for state requirements), of the amended Clean Air Act (CAA).

D.2 Background

EPA has issued regulations clarifying the applicability and procedures for ensuring that federal actions comply with the amended CAA. The EPA Final Conformity Rule implements Section 176(c) of the CAA, as amended in 42 United States Code 7506(c). This rule was published in the *Federal Register* on November 30, 1993, and took effect on January 31, 1994.

The EPA Final Conformity Rule requires all federal agencies to ensure that any federal action resulting in nonattainment criteria pollutant emissions conforms with an approved or promulgated state implementation plan (SIP) or federal implementation plan. Conformity means compliance with an SIP's or federal implementation plan's purpose of attaining or maintaining the National Ambient Air Quality Standards (NAAQS). Specifically, this means ensuring that the federal action will not (1) cause a new violation of the NAAQS; (2) contribute to an increase in the frequency or severity of violations of existing NAAQS; or (3) delay the timely attainment of any NAAQS interim milestones, or other attainment milestones. NAAQS are established for seven criteria pollutants, as follows:

- Ozone (O₃)
- Carbon monoxide (CO)
- Particulate matter equal to or less than 10 microns in diameter (PM₁₀)
- Particulate matter equal to or less than 2.5 microns in diameter (PM_{2.5})
- Nitrogen dioxide (NO₂)
- Sulfur dioxide (SO₂)
- Lead (Pb)

The current standards apply only to federal actions in NAAQS nonattainment or maintenance areas.

D.3 Summary of Air Pollutant Emissions and Regulatory Standards

The proposed SFA/CA Facility would be constructed in Solano County, California, which is designated as nonattainment (other) for 1-hour O₃ and nonattainment (marginal) for 8-hour O₃. Solano County is in attainment for all other criteria pollutants. In addition, the urbanized areas of Solano County (which include the area occupied by Travis AFB) are maintenance areas for CO under the *Final Carbon Monoxide Redesignation Request and Maintenance Plan for Ten Federal Planning Areas* (California Air Resources Board [CARB], 1998). General conformity is being addressed for the Proposed Action. Air quality management in Solano County is under the jurisdiction of CARB, the Bay Area Air Quality Management District (BAAQMD), and EPA Region 9. The applicable general conformity regulation is 58 FR 63214 (November 30, 1993).

The EPA Final Conformity Rule requires that total direct and indirect emissions of non-attainment and maintenance criteria pollutants, including O₃ precursors (volatile organic compounds [VOC] and nitrogen oxides [NO_x]), be considered in determining conformity. The rule does not apply to actions where the total direct and indirect emissions of non-attainment and maintenance criteria pollutants do not exceed threshold levels for criteria pollutants established in 40 CFR 93.135(b). Consequently, the applicable de minimis levels for the proposed SFA/CA Facility project are 100 tons per year (tpy) for emissions of both O₃ precursors, VOCs and NO_x, and 100 tpy for emissions of CO. Tables D-1 and D-2 present the de minimis threshold levels for nonattainment and maintenance areas, respectively.

TABLE D-1

De Minimis Thresholds in Nonattainment Areas

Environmental Assessment for a Security Forces Armory/Combat Arms Facility, Travis Air Force Base, California – Clean Air Act Conformity Applicability Analysis for Travis Air Force Base Security Forces Armory/Combat Arms Facility

Pollutant	Degree of Nonattainment	De Minimis Threshold ^a
O ₃ (VOCs and NO _x)	Serious	50
	Severe	25
	Extreme	10
	Other O ₃ – outside an O ₃ transport region	100
O ₃ (VOCs)	Marginal and moderate – inside an O ₃ transport region	50
O ₃ (NO _x)	Marginal and moderate – inside an O ₃ transport region	100
CO	All	100
PM ₁₀	Moderate	100
	Serious	70
SO ₂ or NO ₂	All	100
Pb	All	25

^aDe minimis thresholds are listed in tpy. The bold number reflects the de minimis threshold used in this analysis.

Source: 40 CFR 93.135(b)

TABLE D-2

De Minimis Thresholds in Maintenance Areas

Environmental Assessment for a Security Forces Armory/Combat Arms Facility, Travis Air Force Base, California – Clean Air Act Conformity Applicability Analysis for Travis Air Force Base Security Forces Armory/Combat Arms Facility

Pollutant	Maintenance Area	De Minimis Threshold^a
O ₃ (VOCs)	Inside an O ₃ transport region	50
	Outside an O ₃ transport region	100
O ₃ (NO _x)	All	100
CO	All	100
PM ₁₀	All	100
SO ₂ or NO ₂	All	100
Pb	All	25

^aDe minimis thresholds are listed in tpy. The bold number reflects the de minimis threshold used in this analysis.

Source: 40 CFR 93.135(b)

In addition to meeting de minimis requirements, a federal action must not be considered a regionally significant action. A federal action is considered regionally significant when the total emissions from the action equal or exceed 10 percent of the air quality control area's emissions budget for the applicable pollutant. If a federal action meets de minimis requirements and is not considered a regionally significant action, it is exempt from further conformity analyses, pursuant to 40 CFR 93.153(c).

D.4 Emission Calculations

D.4.1 Construction Emissions

Construction of the SFA/CA Facility would be conducted entirely during calendar year 2006. Construction emissions are expected to occur as a result of engine exhaust from added vehicles trips of construction workers and offroad construction equipment, including earth-moving equipment and trucks. These emissions would primarily consist of NO_x, SO₂, particulate matter, CO, and VOCs. Because the project is only subject to general conformity requirements for VOCs, NO_x, and CO, the emissions of SO₂ and particulate matter are not discussed in this report.

The construction emissions of VOCs, NO_x, and CO were calculated according to the methodology provided in Chapter 9 of the *CEQA Air Quality Handbook* (South Coast Air Quality Management District, 1993), because BAAQMD does not have specific emission factors for construction projects. Emission factors from Table 9-1, for "Industrial" facilities, were used. These emission factors include onsite construction equipment and worker travel.

The estimated construction emissions are 0.7 tpy of VOC, 9.6 tpy of NO_x, and 2.1 tpy of CO. Detailed construction emission calculations are provided in Appendix C.

D.4.2 Operation Emissions

Operation emissions from the Proposed Action would come from the two new parts cleaners and the boiler for the heating system. The emission increases from vehicles would be negligible because neither the number of personnel operating the new SFA/CA Facility nor the travel distance to the facility are expected to increase from current levels. Participation in classes would increase from approximately 28 to 31 attendees due to increased classroom capacity; however, all attendees are current Travis AFB staff. Therefore, the project would not increase the trips or vehicle miles traveled to Travis AFB. Consequently, emission increases associated with the additional attendees would not be expected.

D.4.2.1 Emissions from New Parts Cleaners

The cleaning solvent to be used during the operation of parts cleaners at the new SFA/CA Facility would cause VOC emissions. Travis AFB currently operates 10 parts cleaners, with average VOC emissions of approximately 10 pounds per year, per parts cleaner. It is assumed that the average annual VOC emissions from the two new parts cleaners would be the same as for the existing ones. Consequently, the total emissions of VOCs from the two new parts cleaners are estimated to be approximately 20 pounds per year. Detailed emission calculations for the parts cleaners are provided in Appendix C.

D.4.2.2 Emissions from New Boiler

The heating system would use a natural-gas-fired boiler with a rated heat input of 203,000 British thermal units per hour. Operation of the boiler would be intermittent. Most of the operating hours would be during the 4-month heating season of November 15 through March 15, for approximately 8 hours per day. Operation at other times would be rare.

To estimate an upper limit, emissions were calculated using the assumption that the boiler would operate 24 hours per day, 365 days per year. This approach resulted in much higher emissions than those that would be expected from the actual operating hours.

The boiler emission factors for VOCs, NO_x, and CO were obtained from Tables 1.4-1 and 1.4-2 of *Supplement D to Compilation of Air Pollutant Emission Factors, Volume 1: Stationary Point and Area Sources* (EPA, 1998). The estimated boiler emissions are 0.4 tpy of NO_x, 0.02 tpy of VOCs, and 0.4 tpy of CO. Actual emissions would be much less than these amounts because the operating hours used in the calculations were much higher than the anticipated operating hours. Detailed calculations of the boiler emissions are provided in Appendix C.

D.4.3 Emission Summary and Comparison to De Minimis Levels

Table D-3 summarizes the projected total air emissions during construction and operation of the SFA/CA Facility under the Proposed Action. Table D-4 provides the annual emission increases associated with the Proposed Action and comparisons with the de minimis thresholds. Emissions of VOCs, NO_x, and CO during construction and operation of the proposed SFA/CA Facility are below the de minimis thresholds of 100 tpy for the three applicable pollutants.

TABLE D-3

Estimated Emissions during Construction and Operation of the Proposed Action

Environmental Assessment for a Security Forces Armory/Combat Arms Facility, Travis Air Force Base, California – Clean Air Act Conformity Applicability Analysis for Travis Air Force Base Security Forces Armory/Combat Arms Facility

Emission Type	Annual Emissions (tpy)		
	VOC	NO _x	CO
Construction	0.7	9.6	2.1
Operation			
Heating System	0.02	0.4	0.4
Parts Cleaner	0.01	NA	NA
Operation Subtotal	0.03	0.4	0.4

Note:

NA = not available

TABLE D-4

General Conformity Analysis for the Proposed Action

Environmental Assessment for a Security Forces Armory/Combat Arms Facility, Travis Air Force Base, California – Clean Air Act Conformity Applicability Analysis for Travis Air Force Base Security Forces Armory/Combat Arms Facility

Emission Type	Annual Emissions (tpy)		
	VOC	NO _x	CO
Construction (2006)	0.7	9.6	2.1
Operation (2007 and after)	0.03	0.4	0.4
De Minimis Threshold	100	100	100

D.4.4 Regional Significance

When the total emissions of the nonattainment and maintenance criteria pollutants do not exceed the de minimis limit, the emissions must then be compared to the air quality emissions inventory of the air basin to determine regional significance of the federal action. If the amount of the emissions is greater than 10 percent of the emissions inventory, the federal action is considered regionally significant for that pollutant (40 CFR Part 93, Subpart 153[i]).

Table D-5 compares the net emissions from construction and operation of the Proposed Action with the San Francisco Bay Area Air Basin (Basin) emissions inventory. VOC and NO_x emissions inventory data were obtained from the *San Francisco Bay Area Ozone Attainment Plan for the 1-hour National Ozone Standard* (BAAQMD, 2001). CO emissions inventory data were obtained from the *Final Carbon Monoxide Redesignation Request and Maintenance Plan for Ten Federal Planning Areas* (CARB, 1998). The potential increase in emissions of VOCs, NO_x, and CO for both construction and operation are below the 10 percent threshold. Therefore, the proposed project would not be considered regionally significant.

TABLE D-5

Comparison of Project Emissions and Emissions Inventory

Environmental Assessment for a Security Forces Armory/Combat Arms Facility, Travis Air Force Base, California – Clean Air Act Conformity Applicability Analysis for Travis Air Force Base Security Forces Armory/Combat Arms Facility

	VOC	NO_x	CO
Basin Emissions Inventory	162,425	191,625	692,040
Construction Emissions (2006)	0.7	9.6	2.1
Percent of Emissions Inventory	0.0004	0.005	0.0003
Basin Emissions Inventory	162,425	191,625	626,340
Operation Emissions (2007 and after)	0.03	0.4	0.4
Percent of Emissions Inventory	0.00002	0.0002	0.00006

Notes:

Emissions are listed in tpy.

Basin emissions inventory data for NO_x and VOCs were obtained from *San Francisco Bay Area Ozone Attainment Plan for the 1-hour National Ozone Standard* (BAAQMD, 2001). Emissions inventory data for 2006 were used for both the construction and operation emissions comparisons.

Basin emissions inventory data for CO were obtained from the *Final Carbon Monoxide Redesignation Request and Maintenance Plan for Ten Federal Planning Areas* (CARB, 1998). Emissions inventory data for 2005 were used for the construction emissions comparison, and data for 2010 were used for the operation emissions comparison.

D.4.5 Conclusion

The emissions calculated for each calendar year are far below the de minimis levels for each of the pollutants analyzed. In addition, VOC, NO_x, and CO emissions would not exceed 10 percent of the total Basin emissions inventories listed in the SIP. On the basis of the conformity applicability criteria, the Proposed Action conforms to the most recent EPA-approved SIP. Therefore, the Proposed Action is exempt from the CAA conformity requirements and does not require a detailed conformity demonstration.

D.5 Works Cited

Bay Area Air Quality Management District (BAAQMD). 2001. *San Francisco Bay Area Ozone Attainment Plan for the 1-hour National Ozone Standard*. October.

California Air Resources Board (CARB). 1998. *Final Carbon Monoxide Redesignation Request and Maintenance Plan for Ten Federal Planning Areas*. September.

South Coast Air Quality Management District. 1993. *CEQA Air Quality Handbook*. April.

U.S. Environmental Protection Agency (EPA). 1998. *Supplement D to Compilation of Air Pollution Emission Factors, Volume 1: Stationary Point and Area Sources*. August.

Appendix E

Proof of Publication

Appendix E

Proof of Publication

**PROOF OF PUBLICATION
(2015.5 C.C.P.)**

STATE OF CALIFORNIA

COUNTY OF SOLANO, s.s.

I am a citizen of the United States and a resident of the county of Solano. I am over the age of 18 years, and not a party to or interested in the above-entitled matter. I am the principal clerk of the printer of THE VACAVILLE REPORTER, a newspaper of general circulation, printed in the city of Vacaville and published daily in the cities of Vacaville and Dixon and throughout the county of Solano. The Reporter has been adjudged a newspaper of general circulation for the cities of Vacaville and Dixon, pursuant to Decree No. 25888 on June 30, 1952, and Decree No. 1006329 on March 20, 1996. The notice of which the attached is a printed copy (set in type not smaller than non-pareil), has been published in each regular and entire issue of THE VACAVILLE REPORTER. And not in any supplement thereof, on the following dates, to wit:

FEBRUARY 27TH, 2005

MARCH 1ST, 2005

I certify (or declare) under penalty of perjury that the foregoing is true and correct.

Dated at Vacaville, California this **1ST**

day of **MARCH 2005**

(Signature)



Cynthia Reed

(This space is for the County Clerk's Filing Stamp)

PUBLIC NOTICE

Proof of Publication of



**PROOF OF PUBLICATION
VACAVILLE REPORTER**